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## ADDRESSES.

### ADDRESS ON STATE MEDICINE.

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*Mr. President, Members of the American Medical Association:*—Hygiene is as old as the profession of medicine. But "State Medicine" is of comparatively recent origin. We find the leader of Israel promulgating sanitary regulations for his people that can hardly be improved to-day. Greeks and Romans honored the sanitarian and gave much time to the study of subjects connected with matters pertaining to public health. Pure air, pure water were deemed by them to be a great desideratum. The Aztec erected aqueducts to supply the City of Mexico with pure water long before Columbus sailed from Palos. But amid the wreck of the Dark Ages the little that had been taught regarding the necessities of hygiene to public health was buried, and only in the last sixty years has its resurrection and reëstablishment upon a firm and more enduring basis been attempted. The early pioneers of our profession in this country were alive to the importance of hygiene; especially was this true of the Sydenham of America, Dr. Benjamin Rush. With the pressure resting on him of the multitudinous and arduous duties of practitioner in hospital and family, as statesman, lecturer and author he found time to investigate and write upon epidemic diseases in a way that showed the most accurate observation and current discrimination of facts bearing upon sanitary science. His work in this direction was recognized all over the world and caused the Czar of Russia to present him with a diamond ring, as a token of appreciation for the valuable service rendered the world by his observations. Yet the profession of America have so far failed to avail themselves of the high privilege accorded them to contribute a sufficient sum to erect a suitable monument to commemorate the virtues, statesmanship and professional ability of this first American sanitarian. May we not hope the movement inaugurated yesterday for immediately raising the necessary funds will be carried to a successful issue, so that in the near future we shall see the consummation of this most desirable work? Following in the wake of this early and eminent sanitarian, zealous workers in our profession, earnest men from other walks in life filled with philanthropic desire to improve the status of their fellows, have worked together to diffuse the knowledge they have gained by careful research among the people until our whole nation is permeated with the leaven of preventable medicine—and although it has been generally conceded that the people by their representatives have the right to enact laws which will protect them as individuals or as communities against all influences which are harmful to the person, property or health of the individual separately, or collectively as a community; yet it was nearly thirty years after the pioneers in this work attempted to improve the hygienic status of the poor in some of the manufacturing parts of the larger English towns, before the first State Board of Health was established by act of legislation in this country, that of Massachusetts.

So luminous was her example and so active, thorough and faithful in their teachings were the missionaries of this gospel of cleanliness and prevention that now every State in the Union, except three, have their Health Department established by legislative act, each of which is doing its own peculiar work, diffusing to a greater or less extent in their respective States a knowledge of personal hygiene, and exercising the powers delegated to them to prevent the spread of epidemic and contagious diseases, with the result that the citizen finds himself less liable to the contagion of pestilential disease, and with a prospect of added years to his average of life. I desire to call your attention to the great and good work these State Boards have done and to commend them for their enthusiasm, their patience and their perseverance in the varied and often delicate duties which have devolved upon them.

Not in every instance have they been composed of men familiar with the rudiments of sanitation, but too often political considerations have entered into the choice that an executive has made. This can not be too severely condemned, and an enlightened public are demanding that these boards shall be composed of experts thoroughly trained by education and experience in the best and latest sanitary knowledge, and the methods of applied hygiene. But the best of those boards have at times felt that the inadequate pecuniary provisions which have been made for work by even the most liberal Legislatures have hampered them in so many ways that the results of their labors have fallen far short of what they might and ought to have been, not alone for the sake of science itself, but for the best and highest welfare of the States themselves.

It is the part of wisdom and good statesmanship that in each State the militia should be equipped and drilled for service as conservators of domestic peace, and as a reliance for protection from a possible foreign invasion. It is interesting and stirs one's patriotism to observe with what alacrity and unanimity, legislators vote generous appropriations for these purposes. How painful the contrast when asked for a comparative pittance for carrying out measures to protect the same people from the invasion of an army of microbes which threaten more lives than the invading army of any foreign foe. My own State spending annually $20,000 more upon its one regiment of National Guards than upon its Health De-

partment, and the great and good Commonwealth of Massachusetts, pioneer in sanitary science as she has been in so much that has been for the benefit of humanity and the advance of our higher civilization, appropriates annually $187,000 more for maintaining her efficient military establishment than for her Board of Health. New York, the Empire State, with its large port of entry, and consequently its especial liability to invasion by any and all forms of pestilence, appropriates nearly $800,000 more for its splendid military department than for its health organization. These will suffice as examples of all the other States. The explanation of all this is not a difficult task; it is summed up in the state of "public opinion." The masses are pleased with, and have no criticism for, expenditures made for the gay trappings, the brilliant equipments, the pomp and grand display of their martial hosts. On the other hand, this same public, while they have become so far enlightened as to believe that some provision is necessary for their protection "from the pestilence that walketh in darkness and the destruction that wasteth at noonday," yet they do not appreciate the quiet, unostentatious work which is done in the laboratory and the quiet methods used to prevent the spread of different epidemics. These State Boards have had their efforts cramped and much circumscribed, as a result of State lines and a want of coöperation with the boards of other States, and this leads us to consider the necessity and desirability of a National Board of Health presided over by a Secretary of Public Health. It seems hardly worth while to discuss in this presence either the necessity or desirability of a National Health Bureau, when we recall that upon more than one occasion this ASSOCIATION has by unanimous vote put itself on record as being most thoroughly in favor of national sanitary supervision. We know, however, that all progress and especially innovations in the habits and methods of discharging national duties, are only brought about by "agitation"; we would therefore stir up your minds and hearts on this subject, not only as an ASSOCIATION but as individual workers, believing that if you all become thoroughly aroused to the great importance of this matter and put into its agitation at home the earnest work which you do into those things that you make mount the stairs of success, we shall not be discussing the desirability of this Bureau, but shall at our next meeting be rejoicing over the accomplishment of our purpose and the fulfillment of our desire. The bill introduced by Mr. Gray into the last Congress and known as Senate Bill 1840 was, I believe a child of this ASSOCIATION; it was a good measure and ought to have become a law. But, alas! it came to an untimely death in the hands of the Committee on Epidemic Diseases. It was prepared and presented as were many other worthy measures, with enthusiastic hopes that the LIII Congress would rise to its high privilege, and embrace the great opportunities that presented themselves for beneficent and practical legislation. But those hopes were

> "Like Dead Sea fruit that tempts the eye,
> But turns to ashes on the lips."

Before this bill is introduced into the LIV Congress, it would be wise, we believe, to amend it, by providing for an advisory board of one member from each State, from the Medical Corps of the Army, Navy and Marine-Hospital Service. This would render it more practical and more popular. This advisory board would only meet on the call of the Secretary of Public Health, and would discuss and advise upon such questions as he might propose. They would be his correspondents in different parts of the country, and would be required to render such service as he might demand. In order, however, to secure the passage of any bill it will be necessary to educate the press and through them the people and their representatives in Congress. This can be best done by the members of this ASSOCIATION, each in his own State. The facts that demand attention are numerous and convincing, and it would seem that they need only to be presented to carry conviction to the mind of the ordinary person. Let the attention of congressmen be called to the records of the War Department, which show that during our Civil War the number killed in battle and of deaths from wounds was 93,443; the deaths from preventable diseases were 108,666. If to this vast number who perished, we add those who were disabled and broken in health by the infliction of preventable diseases that did not kill, as instance the 1,700,000 cases of diarrheal diseases, and we have the startling fact that no foe which could give us battle would decimate the active population of the country like the preventable diseases. At the same time, millions upon millions are appropriated, and rightly too, to give the nation a Navy that will protect us from attacks of foreign armies, but only a few paltry thousands to protect our nation from the greater scourge of preventable disease.

If we desire and expect to obtain satisfactory legislation, either by the enactment into law of this or any other bill, this ASSOCIATION should not only appoint a committee familiar with the subject and its requirements, who are able to present to the congressional committee to whom it is referred, and to other members of Congress the reason for asking and the results reasonably to be expected from such legislation, but a committee who will stand as sponsors for the bill, to see that it is not unduly delayed or entirely smothered in committee. Any one who has had any experience with legislation, knows that unless a bill is known to have behind it some responsible party, who is earnestly watching its fate, that it is very likely to be forgotten and superseded by some measure that has a friend to watch its interests. The ASSOCIATION should further show its earnestness in this matter by making an appropriation from its funds of such a sum as will pay all reasonable expense incurred.

The subjects which would present themselves for study, investigation and regulation to this National Health Bureau are so numerous that we can only call attention to a few of them. It may be true, as suggested in a recent work on degeneration by Nordau, that we are living in an age when degenerates are to the front, forming public opinion and educating the masses by a literature which emanates from the brain of a degenerate, who is so well described by this author as a person who "finds it easier and more convenient to allow his brain centers to produce semi-lucid, nebulously blurred ideas and inchoate embryonic thoughts, and to surrender himself to the perpetual obfuscation of a boundless, aimless and shoreless stream of fugitive ideas; who rarely arouses himself to the painful attempt to check or counteract the capricious and, as a rule, purely mechanical associations of ideas and succession of images, or brings under discipline the disorderly tumult of his fluid presentations. On the contrary,

he rejoices in his faculty of imagination, which he contrasts with the insipidity of the Philistines, and devotes himself with predilection to all sorts of unlicensed pursuits permitted by the unshackled vagabondage of his mind; while he can not endure well-ordered civil occupations requiring attention and constant heed to reality." If it is further true, as is claimed, that the number of these degenerates in this country are being rapidly increased in number by reason of the use of narcotics and stimulants, of tainted, adulterated or contaminated foods, the absorption of organic poisons, the sapping of vitality by the constant nervous excitement under which we live; is it not time that there should be some authoritative branch of the government, to inquire into the causes of this degeneracy and advise some means of staying the tide of national destruction?

It is certain that the safety and welfare of the people of this country, and the interests of commerce, demand the establishment of a uniform system of quarantine, under the control of the Federal Government. It has been well said that in times of danger it is of equal concern to the entire country—to the people of the interior States as well as those on the seaboard—that quarantine should be national in character. It is not just to throw the expense and responsibility of the defense upon any one class of the State, nor is it just to deprive those living in an interior State, from a voice as to the method and degree of protection along the seaboards and frontiers. Furthermore, to render all lines of defense effective, every point must be fortified when the invasion of disease is threatened or possible. Neither is it wise or safe to trust the defenses to chance or to a quarantine system varying at different points, as now exists under the separate regulations of the various States. While safety should be secured, as little interference and inconvenience with commerce and individuals should be allowed as possible.

The efficient Health Officer of Canada has well said, "that from the long period of incubation of some of the infectious diseases and the relative shortness of the voyage from many ports outside the country, and from the possibility of disease lurking in imported clothing and effects, it is evident that unless there could be a routine quarantine detention of all vessels arriving at every port and a routine disinfection of all clothing and merchandise from abroad, there is always the possibility of exotic disease passing the quarantine barriers in an invisible and unrecognizable stage and condition, and first declaring itself in the interior of the country. This can not be avoided without such detention of vessels, passengers and merchandise at the ports of arrival, and such consequent interference with trade and commerce as would be quite unjustifiable and impracticable." Hence the necessity of a central, harmonizing, governing board to bring into coöperation the various local Health Boards—and at the same time to secure the necessary coöperation of all foreign nations; in fact, the adoption, in some form, of the recommendation made at the meeting of the National Quarantine and Sanitary Association by a committee of which our venerable associate, Dr. A. N. Bell was chairman: "That of the adoption, by the commercial nations, of a sound and well-digested code of marine hygiene, and of the necessary measures for insuring its strict enforcement." While we would urge with all zeal the necessity of national quarantine, we would hold in grateful remembrance the work of local boards in our large ports of entry, and the able and thorough efforts in this direction of the Marine-Hospital Service. But we must bear in mind that this service was rendered in default of any national organization that could do this work.

We recognize how much of our safety depends upon the thoroughness with which proper quarantine regulations are enforced by the sanitary authorities of Canada. It is a pleasure to speak with some personal knowledge of the faithful and painstaking work done in the Dominion under the watchful care of the Medical Superintendent of Canadian Quarantine Service, Dr. Frederick Montizambert. By this efficient service the danger of imported diseases from this source is infinitesimal.

Standing as we do on the verge of the centennial of the first successful demonstration of secured immunity from disease, by the use of an antitoxin, it is pertinent for us to inquire if we are, in the light of our present scientific knowledge, carrying out carefully and faithfully, vaccination, as Jenner gave it to us. It only requires the announcement that smallpox has appeared in any community, to learn how large is the number of adults who have never been vaccinated, not because of any objection to vaccination, but from neglect in having their attention called to it. Could we honor the memory of Jenner, and celebrate the discovery of this great boon he gave to the world, in a more fitting manner than by seeing to it that in all the families we enter, this royal deliverance from a most loathsome disease is placed at their disposal? It is unnecessary to discuss before this body the usefulness, the desirableness, the imperative necessity of this wonderful protection to the human family. Each year of the century has demonstrated it. Millions of people have testified to its beneficent powers. In this country, and in most of the countries on the continent, animal lymph is used in preference to humanized. England is now adopting it in some measure; but the Jennerian method of arm-to-arm vaccination has had so strong a hold that it has been slow in adopting the use of bovine lymph.

In nearly all foreign countries the production and distribution of calf lymph is under control of the government; in this country, however, only two States maintain vaccine establishments for the propagation of vaccine lymph. The general government does nothing at all. As a result we have the production and distribution of lymph in the hands of commercial men. Dr. Abbott remarks that, "the private producer conducts his operations in such a manner as to secure the greatest possible returns with the least possible outlay of money. Vaccine lymph is bought and sold, and competition in prices naturally leads to deterioration in the quality of this important article, which should be freed from every influence which may in any way lead to its impairment." But the danger lies not only in the fact that it is an article of commerce, but still more in the methods of its sale. Druggists and middlemen act as agents for its sale; as a consequence this vaccine lymph often remains for weeks or months in the drawers of these agents, and when needed for use the guarantee of the producer is disregarded, the lymph of several weeks or months ago is sold, and finally used for vaccination. As a result it proves inert, and the consequence is charged to the insusceptibility of the infant or vaccinated person.

As a matter of fact, when vaccination is conducted under the best conditions of fresh lymph, insusceptibility is found not to exist, or to be a matter of rare occurrence. If such vaccinations are being made during a brisk epidemic of smallpox, and in families which have been exposed to the disease, it may happen that some children will take the disease and die, during the delay occasioned by waiting to ascertain whether the lymph of uncertain source and age will prove successful or not, and thus life is jeopardized and the practice of vaccination falls into disrepute. Again, the commercial producer is very likely, in his haste to become rich, to take less time and to become careless in his technique—in consequence the lymph becomes contaminated with foreign microbes which may produce either abscess, septicemia, or other pathologic states. For these reasons we would urge that a most imperative demand exists for the establishment of a National Health Bureau, one duty of which would be to produce a pure vaccine lymph under the most careful aseptic conditions and furnish it to State Boards free or at cost.

It is a serious question if the time has not arrived when the medical profession should study from a purely scientific standpoint the great practical question of the effects of alcohol as a beverage.

Dr. Crothers, in an address before the Public Health Association, asserted that, "Inebriety is clearly more prominent as a cause of disease and degeneration than all other factors known at present. The various authorities who have tried to tabulate the number of defectives due directly and indirectly to inebriety, have varied widely in their estimates, showing that the facts are not yet all grouped and studied. These estimates have placed inebriety as the active cause of from 10 to 60 per cent. of all insanity; from 30 to 80 per cent. of all pauperism; from 60 to 90 per cent. of all criminality; and 30 per cent. of all idiocy. These are the highest and lowest estimates made by various authorities in this country and Europe, and bring unmistakable evidence of the influence of inebriety, not only over public health, but over all growth and civilization." Here is a subject for investigation in which our profession should, as guardians of the public health and as conservators of the country's good, take the lead, and not trail in the rear of public opinion as we are now doing. It is not only our privilege, but our duty, as members of the only profession who by training and experience are prepared to enter upon a thorough scientific study of the questions which it involves. If scientific workers in the medical profession, with the authority of this ASSOCIATION, should examine this question from a purely scientific and practical standpoint, taking facts and not theory as a basis, we should soon be in possession of accumulated knowledge which would enable the medical profession to speak with authority upon a problem which has been agitated and considered from other standpoints, without being able to lay down positive and incontrovertible propositions as to its effects, and the best means to remedy the various resultant conditions. It is true that for many years a committee of the British Medical Association have had the subject under consideration and, in connection with the British Social Science and Public Health Associations, have done much to place this question upon a scientific basis, and have furnished data from which an effort has been made to restrict and alleviate the various phases of trouble that have resulted from its general use. Yet as diseases in general are modified or intensified and their sequelæ changed by climate and environment, in how much larger measure shall we find that the effects of alcohol are different in our climate, with our natural characteristics and the different forms or methods of using it. Let a National Bureau of Health take this matter in charge, and pursue an exhaustive investigation upon the lines indicated, calling to their aid and utilizing the work done by committees of this and other organizations, and it would soon be in possession of positive facts with which to elucidate this great problem.

At the present time the whole world is roused and stands with bated breath listening for the scientist to announce the discovery of a new therapeutic or preventative serum. It is believed that we are possessed of a serum or antitoxin by which the mortality of diphtheria is apparently very much reduced; while we are in the stage of demonstration of the effects of this serum in preventing and curing this disease, it is necessary that we should exercise great care in securing fresh reliable antitoxin, and caution in its use. In this matter we are again indebted to Massachusetts for an example of what the general government should do; prepare under suitable conditions the antitoxin of undoubted purity and supply, under proper regulations, free to such communities as might desire it. Investigating experimentation is going on in many laboratories which promises to give us other valuable curative and preventative serums. Although disappointed in the curative value of tuberculin it has proved of great value in the diagnosis of bovine tuberculosis. In the older States, where great attention has been given to dairy interests, every method has been adopted that would in any way increase the product of milk, regardless of the health of the animal; as a result, we have under these conditions what is practically unknown on the prairies of the West, a corresponding increase in diseases affecting the dairy cow, the principal one being tuberculosis.

James Law in a report on tuberculosis remarked: "Few, if any, diseases maintain a sway over a more numerous genera of animals than tuberculosis. All must, therefore, be considered as possible bearers and disseminators of the infection, and no such animal can be left out of account in any systematic attempt to root out the disease. Some are, however, justly held to contribute more than others to the maintenance of the affection and in this sense, in addition to man himself, we must consider as preëminently bearers of this disease cattle, fowls and pigs. It is doubtful if any observation or study has been sufficiently thorough to enable any one to make an accurate table of the prevalence of this disease among the cattle of this country. As already indicated it is hardly known in the West, as in over two million beeves examined in the packing centers it was present in only two-tenths of 1 per cent., while in cows in this city (Baltimore) 2½ to 3½ per cent. showed its presence, and in at least twenty thousand examined in the State of New York it was present in nearly 2 per cent. In Massachusetts it was present in 7 per cent. During the last five years various investigators have been at work upon this subject, and have arrived at conclusions more or less correct regarding some of its phases. These conclusions are of a most startling character and certainly demand and are receiving at

the hands of the profession most serious consideration; among the laity these decisions have produced a state of great alarm and an apprehension of danger from the use of dairy products as well as meat. Time will not permit us to enter upon a full discussion of this subject; we may, however, briefly consider some of the conclusions arrived at after a careful and thorough clinical study, as well as biologic experiments, post-mortem examinations and microscopic investigations of the flesh and milk of a large number of animals. Dr. P. H. Bryce, Secretary of the Provincial Board of Health, Toronto, having made a most careful study presents the following deductions:

1. That tubercular infection has existed in greater or less degree in man, according to post-mortem evidence in a percentage, in some groups of cases, to the extent of from 25 to 50 per cent.

2. That it produces fatal results at different life periods after the first year to an almost equal degree.

3. That the tubercular process, fatal in so large a degree, may nevertheless exist in man and in animals, according to the localization, condition and extent of the tubercle, the constitution of the individual, the environment, as of climate, etc., for an indefinite length of time, the individual finally dying from other disease.

4. That the infection may, however, be present in such instances to an extent sufficient to transmit the disease through the air passages, and possibly in cattle through the medium of the milk.

5. That in many cases the disease may remain in an inactive condition, the man continuing in a fair condition of health, and being able to pursue his ordinary avocation, and the cow appearing well nourished and giving milk in apparently normal quantities; but that in all such cases there is an ever present danger of cold, or other occasion of inflammation setting up general infection of the system with fatal results.

6. That the seat of the disease will largely determine the degree of danger of infection and the direction of its transmission.

7. That in cattle, while the bacilli are probably always present in the milk when the udder is tubercular, yet the bacilli may be present in the milk in a considerable percentage of cases where even post-mortem examination reveals no tubercles of the udder.

8. That in woman, tuberculosis of the mamma is but seldom found.

9. That in cases where tubercle is present in lymphatic glands, in lungs, liver and other organs, the juice of the muscles has been found in some instances to produce infection, even where no tubercle of muscular tissue could be discovered.

9a. That the inoculation of either men or cattle, when not experimental, takes place in practice always by way either of the respiratory or of the alimentary tract.

10. That such inoculation is dependent upon the extent and frequency of the passage of infective materials into either tract, and largely upon the receptive condition of the mucous membrane in both cases. A healthy mucous membrane offers much resistance to the passage of bacilli.

11. That the infection may begin in the epithelial surface of the air cells of the respiratory tract, and probably, in some instances, also in that of the mucous membrane of the intestinal tract.

12. That when bacilli pass into the system they do so by way either of the blood capillaries or of the lymphatic vessels in the walls of the air passages and the villi of the intestines.

13. That when they have passed into the blood capillaries they may produce localized tubercles at the point of inoculation, or may, by passing into the blood current, produce infection at points and in organs distant from the same.

14. That inoculation into the lymphatics, while capable of producing localized infection, tends to transmission of the bacilli to the neighboring lymphatic glands and to the prevention of the progress of tubercular infection of the system.

15. That while inoculation by means of the blood vessels of the intestines may result in tubercles in the liver, spleen, etc., yet inoculation by the chyliferous lymphatic is likely to result in tubercles localized in the lymphatic glands, especially of the intestines and mesentery.

16. That both in man and cattle, by far the most common seat of tubercles is in the lungs and adjacent lymphatic glands; and that this fact, along with the statistical evidence of the frequently repeated cases of pulmonary tuberculosis in persons exposed to the infected air of sick rooms and in cows to that of infected stables, points to the inference that the great proportion of cases of tuberculosis are the results of aerial infection by way of the respiratory tract.

17. That while the great number of deaths from tuberculosis in children, as from *tabes mesenterica* or consumption of the bowels, points to the probability of frequent cases of infection through milk and other food by way of the alimentary tract; yet the still larger number of cases of lung tuberculosis in children, the relatively small number of calves and young cattle infected with tuberculosis and the comparatively few instances of tuberculous cattle in which the intestines, mesentery or other abdominal organs are found on examination to be exclusively tubercular, point very strongly to the conclusion that infection by way of the intestines is relatively seldom in cattle, and that where it does take place in children it most probably is dependent on the previously unhealthy and congested state of the mucous membrane of the walls of the stomach and of the intestines.

After the most careful experiments, Drs. Ernst and Peters arrive at these conclusions concerning the infectiousness of milk: "First and emphatically, that the milk from cows affected with tuberculosis in any part of the body may contain the virus of the disease.

"That the virus is present whether there is disease of the udder or not.

"That there is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis.

"That, on the contrary, the bacilli of tuberculosis are present, but with no discoverable udder lesions."

It will be noticed that these investigators, although working in widely different fields, have made one point in common which seems to be of great significance so far as its propagation is concerned, that is "that the juice of the muscles has been found to produce infection when no tubercle of muscular tissue was found, but when it was found in other structures of the body." The milk of cows suffering from tubercle in the lungs but without any lesion of the

udder or the presence in the milk of any bacillus, will by inoculation produce tuberculosis. This would seem to add weight to the question already raised, whether the disease is caused by the bacilli, or by a virus of which the bacillus is only an incident. The prevention and cure by anti-tubercle serum as advocated by Dr. Paul Paquin and others, if efficacious would do much to save life and prevent the destruction of property. Should further data be needed to show the important place this subject would hold in governmental investigation, it is only necessary to call attention to the commercial importance of our beef and dairy products, the market for which is now in jeopardy by reason of the exaggerated fears of people lest they gather to themselves the seeds of disease.

The subjects which would demand attention from a Department of Public Health, are exceedingly numerous. The question of proprietary medicine which interests every family in the land, is an evil which in spite of the continuous maledictions that have been hurled against it by all scientific medicine, both as organizations and as individuals, has continued to thrive, until at the present time it is intrenched behind millions of money and is held in high esteem by the people because of its ability to hide its worthless character or possible dangerous combination behind a trade-mark. If the manufacturers of these nostrums were obliged to deposit with the Public Health Department, under certain restrictions, as suggested by Dr. Stewart, the formulæ from which they are prepared, it would do more to eradicate this stupendous swindle from the land than all the fulminations that could be hurled at it for centuries; it would have an equally elevating effect upon the science of pharmacy which is so indispensable to our success.

The question of pure unadulterated foods, pure drugs, pure water; the cause and prevention of the degeneration already alluded to and the resulting increase of insanity; the effect of our varied climate upon the diseases we suffer from, and many others all press for solution, until we are ready to echo the sentiment of the Norse legend:

"Labor with what zeal we will,
Something still remains undone,
Something uncompleted still,
Waits the rising of the sun.

"By the bedside, on the stair,
At the threshold, near the gates,
With its menace or its prayer,
Like a mendicant it waits;

"Waits, and will not go away,—
Waits, and will not be gainsaid.
By the cares of yesterday
Each to-day is heavier made,

"Till at length it is, or seems,
Greater than our strength can bear,—
As the burden of our dreams,
Pressing on us everywhere;

"And we stand from day to day
Like the dwarfs of times gone by,
Who, as Northern legends say,
On their shoulders held the sky."

**A Quadruple Birth.**—A case of this nature is reported from Brooklyn, in the family of a tailor named Lowenstein. The mother died with the delivery of the fourth child. Two of the four—the two first born—survived. They are males; one of these has since succumbed. The two juniors, a boy and a girl, were born dead. The combined weight of the four children was sixteen pounds.

## ADDRESS OF WELCOME,

TO THE AMERICAN MEDICAL ASSOCIATION, AT THE MEETING IN BALTIMORE, MAY 7, 1895.

BY S. C. CHEW, A.M., M.D.
BALTIMORE.

*Gentlemen of the American Medical Association:*—The medical profession of Baltimore tenders to you a most cordial and fraternal greeting. Eight and twenty years have passed since this city was last honored by your presence here, and the changes which in that time have taken place in the ASSOCIATION, and in the world around us, are a measure of the changes—happily advances in knowledge,—which have occurred in medical science. For though our organization has enjoyed a continuous and vigorous existence in its corporate capacity from its last sojourn here to the present time, yet it may be suspected that comparatively few of those who were then members of this body are with us to-day. Since then a whole generation of physicians has largely passed away. Another generation has come into existence, so that of those active and strenuous workers in the profession who are here to-day, many had then not entered it, and some, no doubt, were unborn.

"The old order has changed and yielded place to new."

And if such difference exists in our ASSOCIATION, how different, too, were our surroundings at that time. In 1866 the population of the United States was 35,000,000; now it is nearly, if not quite, 70,000,000. Baltimore, when you were last gathered here, was a city of about 250,000 souls; and now it numbers 500,000. But a more important change in its interest to our profession than mere increase of population is found in the fact that this city has become one of the chief centers of medical education in the country, and as such attracts here about a thousand medical students every year.

Again, at your former meeting here, the swell of the storm of civil conflict had not yet wholly subsided; some of its sad results were in many places still manifest and flagrant, and among them was the retardation of medical progress. For, if in the midst of arms the laws are silent, so too the voice of science is hushed or lowered. Peace is the atmosphere in which she flourishes and achieves her greatest triumphs; and in that long and blessed peace which our country has enjoyed, how great are the advances which medical science has made. And perhaps the greatest of all these advances—greater than the discoveries of specific methods of treatment, though these have been great and most important;—greater than antisepsis, and antitoxin, and the other additions to our therapeutic resources, though these have been numerous and most beneficial;—greater than the devising of operative procedures which thirty years ago were hardly dreamed of, but which have already added thousands of years to the general sum of human life;—greater than any of these, "by the all-hail hereafter," because having the "promise and potency" of results exceeding any that have yet been achieved, is the elevation of the standard of medical education and attainment, which has been effected of late years, and which is continually being raised higher and higher. For what may not be expected from the future when we consider what an increasingly large number of accurately trained minds are devoting themselves to medical work?—of minds trained thoroughly, both in those preliminary branches of science

which bear directly upon medicine, such as biology, histology, bacteriology and chemistry, and also in those which are of the very center and essence of medicine itself, such as pathology and experimental therapeutics. Many are now entering our profession every year, equipped with a knowledge of scientific methods of research and practice which not long ago were entirely or in great degree unknown.

This is what the higher medical education is accomplishing, that wherever civilization extends, medicine is prosecuted by multitudes of earnest workers in the spirit of that inductive philosophy, of which it has been finely said that: "It never rests; is never perfect. Its law is progress. A point which yesterday was invisible, is its goal to-day, and will be its starting-post to-morrow." The attainments of this present time will hereafter seem but faint beginnings in comparison with what the future will achieve. For,

"Though much is done, much more remains to do."

A broader light will surely illumine much that is now obscure. More delicate methods of examination than any we now possess, will foreshadow impending diseases, or detect them at earlier and more remediable periods of their courses. The histologic changes in which inflammations take their rise, will be more clearly made out in their very beginning, and their train of consequences arrested. The ptomaines and other poisons by which "the life of all the blood is touched corruptibly," and zymotic diseases produced, will be more thoroughly investigated, and more efficiently guarded against, neutralized or expelled. Epidemic diseases, the nature and origin of which are involved in obscurity, the pestilence that now "walketh in darkness," will be set in clear light, to be blotted from the sum of human ills forever. The great subject of neuro-pathology, now almost in its infancy, will receive immense development, not only through increased knowledge of the special functions of different portions of the brain and cord, but by the power which may then be possessed of tracing the earliest disturbances in vascular and glandular action to altered innervation. All these gains which the future may have in store, and countless others of which we do not now even dream, will be the results of the higher medical education.

And if, hereafter, those of the present day shall be regarded as

"the ancients of the earth,
And in the morning of the times,"

yet it will be looked back upon as a morning not clouded over with the mists of error, prejudice and superstition, but bright with the promise of those good things which then will be blessed realities.

This is what the higher medical education is effecting, that every year a greater number of earnest workers are entering the profession of medicine better qualified for its labors and duties. And what are those duties? We are perfectly familiar with them, and yet, perhaps it is well from time to time to regard them steadily in order to deepen the impressions which they should make upon us. What are the great objects to which our medical science is devoted? Are they not these? First, on its practical side, briefly this,—"that they may have life, and that they may have it more abundantly." The prolongation of life, the mitigation of the evils of life, the assuagement of the pains of life, are what it seeks to accomplish. And on its ideal side it has no other object than the search for truth,—the pure and perfect truth. It is never concerned in making the worse appear the better reason; it admits no *stare decisis* doctrine; it is not guided in its conclusions by authority as having value in itself apart from the evidence it offers. It seeks for truth and for truth alone in the spirit of those great words, "The truth shall make you free;" words, which, as in the highest sense in which they were first spoken, so in every subordinate sphere in which truth is earnestly sought for, will be found to justify themselves. Freedom in some form is ever gained by a knowledge of truth. Freedom from the shackles of ignorance; freedom from the physical ills of pain and disease, with which human life is environed; freedom from the follies of charlatanry and false systems,—the countless *isms* and *pathies* of the day,—those "oppositions or *antitheses* of science falsely so called," from which rational medicine is separated as by the barrier that divides order from confusion, light from darkness; these are the good gifts to be imparted by a knowledge of those truths for which we, as physicians, are striving.

Gentlemen of the Association, in welcoming you here to-day it is our earnest wish that the counsels which you take together may be instrumental and effective in promoting these high objects.

## LECTURES.

### LECTURES ON INTRACRANIAL SURGERY.

#### XI.—THE SURGICAL TREATMENT OF INSANITY.

BY EMORY LANPHEAR, M.D., PH.D.
ST. LOUIS, MO.

Every extensive insane asylum in the world contains scores of patients whose minds might have been saved by timely and proper surgical treatment. Nor do I include in this statement those numerous cases which apparently depend upon peripheral irritation; patients who might be greatly benefited, and some perhaps cured, by the removal of irritating scar tissue, hemorrhoids, diseased uterine appendages, etc.; for in the work of such men as Rohè, of Baltimore, we have seen too many instances of improvement after operation, to allow us to longer doubt the assertion that there are some insanities due to, or at least aggravated by, the long-continued irritation of peripheral nerves; even in my own limited field, I have seen mental aberration of very severe degree disappear almost as by magic under repair of lacerations of the cervix, removal of diseased ovaries, and the cure of rectal disease—hence my plea for closer physical examination of every insane patient, for the discovery of conditions which may be removed by surgical means. *May* be removed? Nay, *should* be, even in the face of the objections of many neurologists who violently oppose every effort of the surgeon to invade the field they have so long held sacred to themselves; and at any stage of the disease—just as soon as the local trouble is discovered. Even some asylum physicians are recently acknowledging the truth of this assertion. Thus Dr. L. A. Weatherby, Physician to Bailbrook Asylum, in an article which has been severely criticized by some psychiatrists, says: "I am myself satisfied that the surgical treatment and cure of hemorrhoids, contracted sphincters ani, tumors and fissures of the rectum, displacements and other diseases of the uterus often—by removing the exciting cause—brings to a happy termination many a case of melancholia and hypo-

chondriasis. Cases under my own personal observation have proved this beyond question." The followers of Pratt, in the line of orificial surgery, though carried to an extreme by their enthusiasm, are calling deserved attention to a kind of work that may yield good results. But, enticing as is this line of thought, it can not be considered in a lecture limited to intracranial surgery, so my remarks must be confined to insanity dependent upon trauma, tumors, softening, abscess and like affections. Nor are such cases rare, as I have intimated in my opening statement. Upon the contrary they are very common—far more so than alienists of the not remote past have led us to believe; it is one of the blots upon the pages of modern surgical history that so many cases of epilepsy and insanity have been allowed to develop subsequent to head injuries.

Upon careful search I can find little in medical literature upon the subject of trephining for insanity; and nothing that is very definite or satisfactory. Indeed, it is quite probable that nothing of great importance, save here and there the report of single cases with comments, is to be found anywhere since Weatherby in the *International Medical Annual* for 1889 says: "Surgery has so far played an exceedingly small part in the treatment of insanity; and yet we are beginning more and more to believe that surgical interference may do good in many cases of mental disease. Latterly, operation has been found to give great relief in cases where intracranial pressure was suspected, and on operation found to be present. We may well be justified in the belief that in time, as our knowledge of the localization of brain diseases becomes more definite, the use of the trephine will be a more constant factor in the treatment of some forms of insanity."

At the outset of our study of this subject it may be said that osteal and dural disease, as well as both structural and functional disturbance of the cortical and subcortical tissues, may occasion every variety and degree of mental aberration. We must, therefore, study each case that we meet, not so much with the idea of distinguishing the particular form or variety of insanity with which the patient is afflicted, as to determine the cause of the trouble and to decide what is the pathologic condition which gives rise to the morbid manifestations. For while we hope that the time may soon come when we can boldly open the cranium and correct certain abnormal conditions by means not yet discovered (and which we may not understand when found—as is true of the cure of tubercular peritonitis by simple laparotomy) we must at the present time confine our work to cases in which we are sure gross lesion exists; it would be manifestly absurd to open the skull for an insanity of toxic cause, whether of extrinsic origin or due to auto-intoxication; or to operate for a purely functional disturbance (if there be such) of the thought centers. The question, Is this case one for operation or is it not? is a most important one, and one which requires the most careful consideration, for we must bear in mind the fact that "insanity from gross lesions of the brain (tumors, new growths of all kinds, enostoses, spicules or portions of depressed bone, embolisms, hemorrhages, softening, cysticerci, etc.) is attended with the same indications as those conditions which arise from diffuse disorders of the brain; that is, giving rise to any of the symptoms of the various psycho-neuroses and cerebro-psychoses. The lowered moral and mental tone after cerebral hemorrhages, for example, is a matter of common observation, as after one an individual is rarely observed to be himself again." (Pepper's "System of Medicine".) The necessity for a most careful investigation to discover the *cause* is at once apparent.

The classes of cases thus far subjected to operation are:

1. Traumatic.
2. Organic.
   - *a*. Hemorrhage.
   - *b*. Abscess.
   - *c*. Tumor.
   - *d*. Meningitis.
   - *e*. Softening.
   - *f*. Chronic hydrocephalus.
3. Epileptic.
4. General paresis.
5. Syphilitic.
6. Paranoiac.

1. *Traumatic Insanity.*—Mental disturbances the result of trauma may assume the form of (*a*), mania; (*b*), general affective degeneration—changes in character or moral nature; (*c*), general pseudo-paresis; (*d*), dementia. Fracture, with depression, is a very common cause of insanity, but it is not even necessary that there should be depression. Shaw ("Mental Diseases," page 130) says: "While fractures of the skull, with depression, are most likely to lead to serious mental mischief, yet even simple concussion may induce chronic, incurable insanity, or the disposition to it." Hence no blow upon the head of a person of neurotic tendency can be deemed insignificant; and trephining should be done at the time of accident if there be the slightest indication therefor. We must not follow the old pernicious doctrine that fractures of the skull should be left alone if not attended by symptoms of serious compression.

Garmany asserts that more than 50 per cent. of severe injuries to the frontal region, when untrephined end in epilepsy and insanity; so far as I can discover from the meager literature of the subject, less than 10 per cent. operated upon have a disastrous termination—so it may be said that fully 80 per cent. of cases of traumatic insanity might be prevented by appropriate treatment at the time of accident. As a parallel to my remark upon the prevention of epilepsy, I may then well observe that:

The way to cure traumatic insanity is to prevent it!

The significance of this remark is at once apparent when we consider the fact that only too oft the chance of recovery vanishes with the passing years, since late operation for traumatic insanity, like that for epilepsy, does not promise brilliant results because the persistent irritation of brain produces such organic change in the brain substance that nature is unable to effect complete regeneration after the source of irritation has been removed. The lesson is, therefore, to operate upon every case of insanity dependent upon demonstrable lesion amenable to surgical treatment at the earliest possible moment after development of the mental disturbance; and in serious injury to the skull to elevate depressed fracture, etc., at the time of accident, in order to prevent the appearance of this formidable condition.

The words of Agnew in his last paper are peculiarly appropriate at this point: "Whenever the medical profession can, in my judgment, accept the doctrine that *every depressed fracture, however small the*

*depression and irrespective of pressure symptoms, is a proper subject for trephining*, then will traumatic epilepsy and insanity largely disappear."

But the mere lapse of years need not prevent surgical interference in cases where there can be little doubt as to the connection between the head trouble and the insanity, for some most brilliant results have been obtained from operative measures even many years after the mind appeared totally shattered.

A case which shows what may sometimes be accomplished in the treatment of this form of insanity, even a long time after the development of the disease is as follows:

*Traumatic Insanity—Trephining After Three Years—Complete Recovery.*—P. G., was 52 years of age at the time of operation. Some four years before he came under my care he was kicked upon the forehead by a mule. There was a marked depressed fracture of the frontal bone in the median line just at the margin of the hairy scalp; but as he fell into the hands of a "conservative" surgeon who believed that a depressed fracture should not be operated upon unless profound symptoms of pressure are present he was not trephined, because he was unconscious but a few moments and very soon went about his business as if the injury were of no consequence. If a progressive modern surgeon had been called, who believed that every depressed fracture of the skull should be subjected to operation at the time of injury, however slight the depression and irrespective of pressure symptoms, the most disastrous consequences might have been averted; for very soon a most remarkable change occurred in the patient. Before the accident he was an exemplary husband, and devoted father; a strong opponent of intoxicating liquors and a Christian gentleman; noted for his integrity and excellent character. But soon it was seen that his character was totally changed—he deserted his wife and sought the companionship of prostitutes; he was so abusive to his children when at home that they fled from him in terror; he became so addicted to the use of whisky that he soon wasted his property and sunk to the level of the drunken sot, as often found in the gutter as in bed; he cursed and swore and seemed to lose all sense of manhood and decency—he was obscene, vulgar and debased. This condition continued for a period of more than three years with occasional intervals in which it was thought he was going to "reform"; finally after a long debauch suicidal and homicidal impulses became predominant, and at last the relatives consented to operation. Upon removing the depressed bone a large fragment of the vitreous plate was found projecting through the dura an inch or more into the frontal lobes. The superior longitudinal sinus was crushed and filled with organized blood clot, and much of the middle frontal convolutions showed signs of pressure but no decided degeneration. There was little shock and no meningitis following this extensive operation. A marked quietness instead of constant restlessness was the first change noticed in the mental condition; the countenance became more serene, the voice less coarse. As convalescence progressed it was found that the patient was more like his former self—he greeted his wife and children with a pleasant smile and kind words instead of scowls and curses. And when bodily health was completely restored he became his old self once more; gentle, affectionate and trustworthy. This improvement was not temporary. More than two years have elapsed, and his mental condition is as good as before the accident. He recalls the incidents of his mad career as one remembers a vivid dream, shuddering at the horrid recollection and trying to forget the terrors in the pleasant realities of the present.

Here, gentlemen, was a triumph of surgery, a human mind restored even after all hope seemed gone. It was a case which followed closely the history outlined by Spitzka ("Text-book of Insanity," page 371): "The subjects of this disorder are noticed to undergo a change of character, to exhibit a tendency to alcoholic excess, to become morally perverse, suspicious, brutal and quarrelsome and to manifest murderous and other violent impulses, occasionally associated with fits of maniacal exaltation or furor. This condition is remarkable for its long duration and its frequent and sudden changes. As a rule, dementia terminates the history of the case."

A number of successful operations are mentioned in the *Annual of Universal Medical Sciences* for 1888, by Horsley, Price, MacDonald and Fletcher. The latter operated upon eight cases at the Indiana Hospital for the Insane. All of the insanities developed some years after the accident and all were subjected to operation a long time after the disease was manifested. In all but one, strong adhesions of the brain to the dura were liberated. All were melancholic, suicidal and profane, and four of them destructive to clothing. All were relieved. In none had the cortex undergone any decided pathologic change. Commenting upon the reports Senn observes: "When we consider that under strict antiseptic precautions trephining can now be done with hardly any risk to to life, it must become apparent that in cases of insanity following fracture of the skull, this operation holds out a ray of light in otherwise hopeless cases. The success which has attended the operation thus far is sufficient to warrant further trial."

But such remarkably favorable results as those mentioned and as obtained in the case just related are not often possible long after the injury, as I have found in more than one attempt at restoration of mind in old trauma. A marked case may be briefly summarized thus:

*Traumatic Insanity—Operation—No Improvement—Death by Suicide.*—Wm. W., a young man of much promise fell and fractured his skull in the fronto-parietal region. He soon after became morose and sullen, abandoning his studious habits and deserted his refined companions. He became addicted to the excessive use of whisky, associated with gamblers and courtesans, neglected his business and family, and finally degenerated into a high-grade imbecile, typical terminal dementia—irresponsible, epileptic and sometimes maniacal; throughout markedly hysterical. After some three years of this kind of life he became my patient. I trephined him, corrected the difficulty fully, as I thought, and expected a brilliant result. Recovery from the operation was prompt and satisfactory so far as his bodily condition was concerned, but a melancholia followed and he committed suicide a few weeks after his discharge from the hospital.

Had this patient been properly treated at the time of injury this disastrous result would have been averted. More than this—I am of opinion that had I had an opportunity of operating soon after the development of the insanity, before such changes occurred in the brain as to prevent regeneration after removal of the cause, I might still have saved the life and mind of this young man. The case emphasizes the necessity for operation soon after the onset of mental symptoms, but still more strongly teaches that all injuries of the frontal region, of serious degree, imperatively demand operation at the time of accident; regardless of the teaching of the past.

Quite a number of successful results have been obtained in this city from trephining in cases of traumatic insanity of recent development, by Drs. G. W. Cale (two cases), F. J. Lutz, T. F. Prewitt and W. H. Mayfield. It is unfortunate that *all* cases of insanity operated upon have not been reported, giving results, whether favorable or unfavorable.

2. *Organic Dementia.*—"Organic dementia is the insanity which results from cerebral hemorrhage, embolism, thrombosis, ramollissement, tumors, hydatids, pachymeningitis and a few other affections. These cerebral diseases are not necessarily accompanied by mental alienation. Still they cause delirium or coma and certain other psychical dis-

turbances very frequently, and it is but natural the mental disorder should have the nature and often the permanency of positive insanity." (Kellogg, "Reference Hand-book of Medical Sciences," vol. IV, page 129.) These intracranial lesions produce the insanity: 1, by direct pressure on the brain convolutions; 2, as irritative lesions, in a reflex way; 3, by obstruction of blood supply; 4, by inflammation and abscess formation; 5, by non-inflammatory softening—as in embolism. Some focal diseases may act in not only one but several of these ways. The most common character of the psychical manifestations is a progressive impairment of all the mental faculties, ending in more or less complete loss of mind; in one of my cases (Wm. K., presently to be mentioned) this amounted to total and permanent idiocy. From what has been said, the necessity for early operation is obvious.

(*a.*) Insanity due to hemorrhage. I can find no account of any operation done for mental trouble due to cerebral hemorrhage, except the case of McBurney, of New York, who trephined and removed an irritating clot four months after the rupture of the vessel; with complete cure of the mental disease. But the excellent prospects of cure make me advise operation in every recent case of insanity following accessible meningeal or cerebral hemorrhage.

(*b.*) Insanity due to abscess. As a general thing abscesses of the brain are too rapid in their progress to give rise to chronic insanity; yet occasionally the diseased condition may exist for many months unsuspected or at least undetected. I believe that in every case of insanity preceded by chronic otitis media with suppuration, exposure of the favorite seat of cerebral abscess is justifiable. And where abscess is believed to be present elsewhere, exploratory trephining should be done. It will be remembered that one of my cerebral abscesses of the frontal region (Case 3, JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, April 13, 1895) was accompanied by serious affection of the mind, and that all the mental symptoms disappeared immediately after evacuation of the accumulation of pus.

(*c.*) Insanity due to tumor. Here the symptoms are exceedingly changeable and often chronic. At first they consist chiefly of headache, giddiness, and sleeplessness, together with irritability, restlessness, loss of self-control and hallucinations of the special senses; later, progressive failure of the mental faculties occurs, sometimes ending in total obliteration of all sense. This was typically shown in a case I operated upon, viz:

*Durhematoma (Cyst of the Arachnoid), with Insanity—Operation—Death.*—W. K., of the Indian Territory, was first seen by me Jan. 8, 1892. A satisfactory previous history was not obtainable, but it seems that he was as intelligent as other boys until about the age of 14 years, when he began to have epileptic convulsions of the right side, followed by temporary aphasia. The spasms finally became general, partaking of all the characteristics of *haut mal* including the mental deterioration. Finally, partial paralysis of the right side gradually made its appearance, accompanied by difficulty in remembering names and other nouns. As the epilepsy increased in severity this paralytic influence deepened until at last he was completely paralyzed in the right upper extremity, the use of the lower was so greatly impaired as to prevent walking, and language became totally obliterated. For a time he read the papers for a little while daily and seemed to understand much of what was said, though his intelligence was evidently greatly impaired. Finally he became so nearly imbecile as to require constant watching, particularly during violent outbreaks which were quite common and full of danger to those around; at the time of my examination his mind was a total wreck—he was a typical idiot in his mental condition, though his face showed nothing abnormal.

Owing to the fairly clear, though not wholly satisfactory evidence, that the convulsions invariably began in the right hand, then spread until the whole body was involved, and also to the existence of the aphasia after the convulsions and before the dementia appeared, I had him sent to the hospital where I opened the skull, assisted by Drs. Krueger and Maxson. Upon cutting through the dura a cyst of the arachnoid was found, much larger than a hen's egg, lying over the speech and arm centers. This I tried to remove entire, in doing which I exerted too much pressure upon the brain, for the patient ceased breathing (although no chloroform had been given for several minutes) and only revived by long-continued artificial respiration. I hastily cut away the cyst and closed the dura; while doing the latter work another suspension of respiratory efforts was noted and again artificial respiration had to be instituted. The wound was quickly closed and dressed and the patient placed in bed as hastily as possible, when every possible means to combat shock were employed—to no avail; he died within a very short time.

Another case of insanity dependent upon tumor, I have already described under the title, "Osteoma—Operation—Recovery," in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, May 4, 1895. As I stated in my lecture on brain tumor, this disease is much more frequent than generally believed—particularly in insane patients; Clouston found brain tumor in 7 of 36 cases of organic dementia in his post-mortem work, and in 1,000 autopsies upon insane patients, taken without selection there were 28 tumors of the brain, mainly accessible. So operable cases must be comparatively frequent.

(*d.*) Insanity due to pachymeningitis. That certain forms of insanity are due to inflammation of the dura (and of the pia also), has been known for long, as post-mortem work has often demonstrated the fact that as a result of chronic pachymeningitis externa, the dura is frequently so adherent to the bone as to defy separation, with many fine osteophytes and sometimes bony plates of some size; while thickening of the arachnoid is quite common in some chronic forms with enlargement of the Pacchionian bodies; and adhesion of the pia to the brain is usual in paretic, syphilitic and alcoholic insanities. Quite a number of cases have recently been operated upon by opening the skull widely (2½ by 4 inches) over the frontal region, opening the dura, carefully breaking up adhesions between membranes and brain, dusting in much iodoform to keep the surfaces temporarily apart and closure of the wound in such manner as to secure primary union. Results have not yet been published.

(*To be continued.*)

## ORIGINAL ARTICLES.

### NEW DEPARTURES IN THERAPEUTICS.

Read in the Section on Practice of Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, May 7-10, 1895.

BY JOHN H. HOLLISTER, A.M., M.D.
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The trend of medical thought in any given age and the theories then accepted are best discerned by a study of its therapeutics.

Whether the doctrines of Solidism, Fluidism or Vitalism for the time prevailed, we discover the fact not so much by the nomenclatures which men gave to diseases, as by the impress which was left upon therapeutic teachings. And it will not be difficult to determine what are the theories now entertained,

when in other days the methods of treatment now proposed shall be reviewed.

It is a noticeable fact, and it could not have been otherwise, that in the past, in all its conflicts with diseases, medicine was compelled to conduct a defensive warfare. So long as essential etiologic factors were unknown it was only possible to deal with *results*, and that, in these procedures our methods should have been largely empirical. Along such lines we must have proceeded indefinitely, had not the improved microscope and the perfected laboratory been placed at our command. By reason of these and the services they were able to render, our methods of treatment are undergoing a signal and most wonderful revolution. Discoveries are already made and methods of treatment which they suggest are so radical and give promise of such before unknown results, as to stamp the closing years of the century with the impress of a new era, from which possibly will date the renascence of medicine.

In connection with the investigations and discoveries which have been made during the last twenty years, by reason of which therapy is permitted to assume an attitude so markedly aggressive, two methods of treatment are brought prominently to our attention which, while they revive the old theories of cellular and humoral pathology, yet each give promise of favorable results in the cure of diseases.

The older one is designated organic therapy or the therapy of substitution.

The latter, which at this date, more than any other subject, commands in both hemispheres critical study by our most accomplished thinkers, workers and writers is that of sero-therapy.

The cell theory so ably championed by Virchow has still and in the present field an able following, while Behring more than any other, leads the van in the advocacy of humoral pathology and of a special method of treatment conformable thereto.

Organo-therapy is based upon the claim that all vital activities have a cell-genesis; that cells are possessed of definite organisms and environments; that they are the basis of all functional activities; that in the animal economy through their agency definite results are accomplished, such as those of nutrition, secretion, and excretion; that they are responsible both for constructive and morphologic changes, and that when a perfect equilibrium in their activities is established, the whole economy is in perfect health.

It is asserted that the impairment of health begins with the impairment of cells; that these are affected, favorably or otherwise by their environments; that each has need of special pabulum, the withholding of which will surely cause first, impaired functional action, and later, cell degeneration and death; that remedial agents are valuable or otherwise, as they favorably or unfavorably affect the ultimate cell organisms. It is asserted in connection with this theory that cells possess an inherent defensive power and that by reason of these, there exists in the animal organism an ever-present and pervasive *vis vitæ*.

It is asserted that, as the result of stimulation, the cells develop those substances known as albuminates, proteids and nucleins, and that these are resistant and destructive to toxins that may be introduced into the system; that by reason of the presence or absence of these antitoxins, animals are susceptible or immune to diseases, and that in proportion as cells are irritated by reason of an offending presence they are able, within certain limits, to eliminate an increased amount of their protective substance.

That these are the defensive weapons of warfare, and that when the leucocyte embraces the bacillus, as does the octopus its victim, it is not in the capacity of a phagocyte, but for the purpose of bringing more immediately to bear upon the intruder the deadly power of its own toxic secretion, and that thus through the vital energies of the organic cell the antitoxic agent is furnished and immunization becomes possible.

Acting upon the presumption that the cells have the elective power in the selection of their foods, similar to that which is apparent in the growth of all the tissues, it came to be believed that the elements essential to the nourishment of particular organs may be supplied, when wanting, from those existing in other like organs, and that special nutritive results can be attained by the use of various organic extracts.

Thus the views of Brown-Séquard, at the time but little regarded, have more and more gained in favor, until now this method of treatment is becoming somewhat general and will continue, until by present and future observations its real value is determined.

Some of these extracts have been used to a limited extent by your reader during the last two years, particularly the preparation of red-boned marrow, and without a detail of cases, which might here be justly cited as original work, it may be said in a word that in the treatment of some conditions, notably that of simple anemia, by the use of bone-marrow better results seem to be attained than had hitherto been accomplished with either arsenic, oil or iron.

Much is just now claimed for the substance termed nuclein, although its discovery is not new. For the study of its physiologic properties and for its use as a remedial agent we are mostly indebted to recent valuable labors and to an able advocacy, on the part of Professor Vaughan, of Ann Arbor.

In a published address of which nuclein is the subject, he says, speaking of the proteids and albuminates in the same connection: "These substances when introduced into the body of animals in certain amounts and under certain circumstances have the property of stimulating certain organs in the animals, so that those organs produce and supply to the blood an antidote to the substance introduced; the glands that manufacture these immunizing agents being mainly the spleen, the thyroid, and bone-marrow."

For nuclein thus obtained much is claimed. It is believed to pervade the intestinal canal and by its antiseptic powers, to prevent there, as well as in the tissues, premature decomposition. It has power, it is believed, to stimulate brain and nerve centers and thus energize the system when those powers are failing, furnishing a needed stimulant alike to the invalid and to the aged. It is believed to exert an antidotal influence against the toxins of diphtheria and after repeated trials by Knapp, Auld, Bleyer and others, its use is strongly recommended in the treatment of this disease. The explanation being that when by reason of the invasion of the diphtheria bacillus and when its toxins are acting as a powerful cell irritant, that then by cell reaction an increase of nuclein is developed in the blood, the antitoxin power of which

destroys the specific poison. The remedy is on trial. Its use is strongly recommended. Its value is yet to be determined. Of its production and the method of its use it is not needful now to speak. Strongly as the organic extracts are recommended, we are not over-sanguine as to the good which they may be able to accomplish. Their use constitutes one of our new departures, the warrant for which requires further demonstration.

We pass now to a second new method of treatment, namely that of sero-therapy. The series of discoveries which paved the way for its use, as now recommended, and which are well verified is of interest, whatever may be determined as to their utility.

The serum treatment is a sequence of the germ theory of disease, to the development of which a number of most important discoveries contributed. It dates primarily to the discovery of cell agency in fermentation in 1836 by Caignard; then to that of Donne a year later, of living organisms in pus; to the discovery in 1838 by Adet and Beaupertius that all forms of putrefaction are accomplished by the agency of living microbes; then to the fact announced by Schwan that the air is largely responsible for their conveyance. It was Pollander who in 1839 demonstrated the presence of bacilli in the blood. His statements were soon confirmed by Davaine, who also found them present in the tissues. The methods of development and the methods of culture of microorganisms were next made known.

Then came that most important announcement that specific microbes isolated by culture are capable of producing specific diseases. At this point a serious difficulty was encountered. Systemic intoxication by their toxins could be accomplished independent of and beyond the location of the germs. They might not be able to accomplish their deadly work *per se*, but they could develop and diffuse toxins which could accomplish that result.

How to deal with the different poisons of microbic origin became the question of the hour. Happily, for its solution we were not long in waiting. It matters not, for the moment, whether to Richet or to Ortaga of Tokyo, or to Behring belongs the credit of the discovery. Most important of all, in its practical bearing, is the essential fact, namely, the *germicidic power of blood serum*. It were enough for each or either of them if, with reference to this discovery, honors were even.

But to Behring alone doubtless belongs its first distinct enunciation, in what henceforth will be known as "Behring's law." His words were these, namely, "that blood and blood serum of a person which had been rendered artificially immune against a certain infectious disease may be transferred into another individual, with the effect to render the latter also immune, no matter how susceptible he is to the disease in question."

This fundamental law of artificial immunization was first enunciated by Behring and Kitasato in 1890 when they demonstrated that the blood rendered immune against anthrax, but made so by repeated inoculation with the anthrax cultures had the power of destroying tetanus toxins, and also that the germicidal power was present in the blood after it was withdrawn from the animal, and finally, that its transfusion to other animals rendered *them* immune from the disease. Thus the possibility of artificial immunization became an established fact, not only against bacilli themselves but against their toxins when injected in solutions.

The further fact was also demonstrated that the antitoxin potency of serum might be greatly increased by repeated inoculations. Then came the question for decision, as to what the serum-potency should be, and the amount to be used permissible with safety. These important facts having been first settled, with reference to tetanus, it became at once a question whether all infective diseases might not in like manner be amenable to treatment.

To this end, Haffkin is conducting his experiments now numbered by many thousands in connection with the cholera bacillus. But with us during the last two years the paramount attention of almost all investigators has been turned to the treatment of diphtheria. The methods now being employed are too familiar to require recital here. Serum culture is now so far advanced, both in Europe and in this country, that the means for its use are fully at command. Again and again it has been demonstrated that this disease may be propagated at pleasure by cultures of the diphtheretic bacillus. The timely use of serum can more easily be made in this disease by reason of the local manifestations which surely demonstrate its presence, and afford ample time for remedial interference.

Its bacteriology and pathology were admirably set forth by Dr. Simon Flexner of this city, (Baltimore) in an address before the Alumni Association of Jefferson Medical College, and the history of its various phenomena familiar to most of us is there admirably expressed. Our literature in fact upon this subject is ample and much of it admirable.

But the question that it concerns us now to answer is this, Does the serum treatment give results so favorable as to command for it a permanent place in our therapeutics? It would be an immense labor to tabulate the statistics already published, detailing results from serum treatment.

The consensus of opinion in Germany found guarded expression four weeks ago at the Congress of Medicine in Munich. It was there stated that in Berlin in connection with its use the mortality fell from 44 to 21 per cent.; at the same time Professor Bayinsky reported 525 injected cases. The previous fatality had been 21 per cent., while under this treatment it was reduced to 18 per cent. And he also stated that in July and August last, when the supply of serum failed, the mortality rose to 51 per cent. Others had failed of such favorable results and were eminently conservative as to the benefits which they had witnessed.

The views of this body at the close of the discussion were embodied in three resolutions: 1, that its use was harmless to patients; 2, that a majority of observers had seen good results; 3, that experiments concerning immunization were not yet sufficient. With reference to their first point taken—namely—that its use is harmless, notes of warning are already sounding along the lines. The cautions of Hussman of Berlin, ought not to pass unheeded, nor the recent statements of Dr. Joseph E. Winters, at a late meeting of the Academy of Medicine, in New York, detailing his experience at the Willard Parker Hospital. They should certainly lead us to cautious and critical observation of many cases and their results, before yielding ready assent to the claims put forth, and to an unqualified indorsement of the serum

treatment of this disease. The able and candid statements of Dr. Winters are worthy of most careful consideration.

Again, the globucidal power of serum, transferred from one animal to another, and the serious results which may follow therefrom is a subject which has not as yet been sufficiently considered by serum advocates, and in this respect the first resolution of the Munich Congress affirming its harmlessness will hardly prove defensible.

Another subject not yet considered in this connection, as it yet *must be*, is that of the effects and counter-effects of *mixed infections*. The final demonstrations needful for the settlement of *this* question will call for a devotion of time and of talent transcending that of any other which in medicine or in any other department of learning is asking for the *ablest* of investigation.

I close with the consideration of one other point. Conceding that infectious diseases are developed by microörganisms, and that germicidal treatment is requisite, *if* it shall be found that the use of blood serum is injurious in its effects, and not warrantable in treatment, it yet remains to determine whether there are not other and safer means yet untried which may accomplish the desired result.

The beginning of an answer to this question may possibly be found in the discoveries of a new antiseptic agent by Professor Edinger, of Freiburg. Knowing that mucous secretion and saliva in particular was possessed of decided antiseptic properties and that thiocyanate of potassium was present in a rather considerable quantity in that secretion, he obtained by its combination with quinolin a rhodanate of methyl-pyridin. With this substance he carried on a series of experiments with special reference to its effects upon diphtheria and cholera bacilli and upon pyogenic microbes. He found that a "1 to 200 solution of this compound kills the cholera bacillus within an hour; a 1 to 1000 solution kills the diphtheria bacillus within an hour; a 3 to 200 solution kills the staphylococcus aureus within an hour. The same result is obtained by exposing during ten minutes the cholera bacillus to the action of a 1 to 200 solution of this rhodanate; the diphtheria bacillus to a 3 to 200 solution and the staphylococcus aureus to a 2 to 125 solution. To kill the same microbes in a minute, a 3 to 1000 solution is required for the cholera bacillus; a 9 to 1000 solution for the staphylococcus aureus. Cultures of the comma bacillus are prevented by a 1 to 10000; of the diphtheria bacillus by a 51 to 10000; and of the staphylococcus aureus by a 1 to 400 solution."

It is evident therefore that in this substance we have a newly discovered and powerful germicide. The discoverer states that it is not in the least caustic and has that advantage over carbolic acid; that it is not in the least poisonous and is thus free from the objection which holds against the use of bichlorid of mercury. It is quite possible that in this rhodanate we have a new antiseptic agent which may next lay special claim to public favor.

The rhodanate of quinolin is already in successful use in the treatment of gonorrhea, and as this remedy is far more potent and perfectly harmless, its value will soon be made apparent.

Such discoveries are strongly suggestive of what is yet to be revealed. Enough is already known to require the recasting of all our former literature and to greatly modify most of our former therapeutic teaching. It becomes us to be, to the utmost, diligent in the attainment of facts, to be justly conservative in the acceptance of extreme statements, but to welcome every new departure that gives reasonable promise of rendering benefactions to mankind.

DISCUSSION.

DR. QUINE, of Chicago—Mr. Chairman, there are two of the new departures in therapeutics to which attention has been directed prominently by the essayists; concerning these I have had a little experience, which possibly justifies me in responding to the invitation that I have just received. In regard to the use of the extract of bone marrow, I am glad to be able to indorse unequivocally all that has been said in favor of it, in connection with ordinary anemia, or chloralanemia, or even in the treatment of apparent cases of progressive pernicious anemia. An example has come under my observation, and indeed it has been reported, of splenic lukemia, in which the persistent administration of bone marrow, extending over a period of several months, had the effect of increasing the number of red blood corpuscles to the extent of 17 per cent. and the hemoglobin to the extent of 8 per cent., but notwithstanding this excess effect upon the red blood corpuscles, the multiplication of white corpuscles went on with still greater rapidity, so that the total volume of blood was greatly increased by reason of the multiplication of its organized constituents I have had but little experience in the use of diphtheria antitoxin, but enough to enable me to say that I have witnessed some deleterious effects produced by that agent. I have witnessed examples of extraordinary eruptions on the skin, and a bloody and somewhat intractable albuminuria, which finally eventuated in recovery, but I have also witnessed very striking cures of threatened laryngeal diphtheria and threatened nasal diphtheria, as a result of two or three hypodermic injections of the antitoxin under circumstances in which it appeared certain, humanly speaking, that death would have occurred within a period of twenty-four or forty-eight hours if a remedy of this kind had not been at hand. Physicians of experience have witnessed infants struggling for their breath, and already cyanotic, under circumstances in which immediate resort would be had to tracheotomy, have administered a dose or two of the antitoxin, and next morning, in visiting the house of the patient, have peeped around the corner to see if there was crape on the door, and on entering have found the patient breathing freely and easily, and crying in a natural tone of voice. Under such circumstances a physician feels warranted in speaking very loudly in favor of the continued employment of this remedy, even if experience has shown that it is a "gift horse" whose merits need to be very closely inspected.

DR. SUMMERS, of New York—I have been for the past nine months almost exclusively experimenting on the subject of nuclein. At the Board of Health we have had some extended experiments, comparing it with antitoxin. I have a paper upon that subject which I propose to offer, but Dr. Hollister has largely "stolen my thunder." I have engaged also for this Section one of the most experienced microphotographers in the city of New York, to exhibit upon a screen the effect of leukocytosis, at some hour which your Chairman will appoint, and I have also an exhibit showing the direct action of this under the microscope. I shall not take any of your time in further discussion, but in the paper which I shall present, following the trend of Dr. Hollister's remarks, all of this will be elaborated.

DR. TURCK, of Chicago—Since the experiments of Dr. Vaughan, who demonstrated that beyond doubt the toxic effects are carried by the blood throughout the whole system, I have been led in my line, the stomach and intestines, to determine the effect of nuclein in those cases of autointoxication from the gastro-intestinal tract. Whether in fever, or in chronic gastro-intestinal diseases, the most marked symptom is the toxic effect. Whether it be the excitement which produces that nervous irritability known as neurosis and neurasthenia, or the depressed state leading to melancholia, we know that these are the results of the toxins of microörganisms growing upon the walls of the gastro-intestinal tract. We can not reach the intestines directly, but the experiments that I have made with these cases, combining local treatment upon the stomach, the dietetics and the treatment of the colon with the administration of nucleins has had a marked effect against these toxins that are produced in the gastro-intestinal tract. Especially in cases of excitement, the vasomotor changes in

which we have sometimes agrophobia, the fear of space, seemed to go hand in hand in improving, with the improvement in these symptoms.

It is a great addition to our knowledge that these symptoms are the result of toxins due to the developing and growing microörganisms on the wall of the gastro-intestinal tract, and that the nucleins have an antitoxic effect.

## CALOMEL.

### A STUDY OF ITS PHYSIOLOGIC ACTION AND THERAPY IN GASTRO-INTESTINAL DISORDERS IN ONE HUNDRED AND FORTY-FOUR CASES—IS IT A DIURETIC PER SE?

Read in the Section on Practice of Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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The physical properties of calomel are so well known to the profession that they need little consideration here. One point presents itself at this time and that is, Do you examine into the purity and quality of the calomel you use, or do you accept it as perfectly pure? Have you ever stopped to ask yourself the question why your large doses of calomel always caused griping and pain in the majority of cases?

Calomel is subject to adulteration; to improper purification in manufacture; and to chemic changes both atmospheric and in chemic mixtures. Bichlorid of mercury is the most common impurity found in it, and this varies from the smallest trace to comparatively large amounts. Many instances are on record where the usual large doses of calomel have produced violent griping, cramps and gastro-intestinal catarrh which were undoubtedly caused by the presence of bichlorid of mercury rather than "a special idiosyncrasy." In fact, instances of fatality are reported from the administration of large doses of calomel contaminated with this poison.[1]

On the other hand, calomel may contain such large amounts of barium, calcium, lead and other impurities that its action is greatly lessened and rendered almost inert. With these thoughts before us, and a thorough knowledge of making appropriate chemic tests for their confirmation, we can often explain many untoward actions which might otherwise be attributed to a pure preparation.

The methods of administering calomel have undergone a great change during the past ten years, and its general and special applications have been carefully studied and extended. It is an axiomatic fact that calomel should never be administered with acids or chlorids, and not at a time when the stomach is performing its digestive functions, owing to the danger of chemic change from the mild chlorid into the bichlorid, thus giving the effects of the latter drug. Until recent years, calomel has been administered in its purity, or in combination with other drugs, in doses varying from one to forty grains and in many cases the patient was an innocent victim to an overdose. To-day, calomel should be thoroughly triturated with sugar of milk and administered in doses of one-half to five grains. Why this change?

Calomel plain is a heavy drug; is very slowly assimilated and absorbed, owing to its extreme insolubility and the size of its isolated crystals. In this form it is not in its finest state of subdivision, and is confined to a smaller area of distribution over the tissues of the alimentary tract. Calomel, when thoroughly triturated with sugar of milk, is brought into its finest state of subdivision and its presence can be readily demonstrated with the ammonia test in a trituration of 1 part in 1000, thus demonstrating the possibility of administering it in such small doses if desired. One grain of triturated calomel is capable of distribution over a wider area than the pure drug alone; is in a finer state of subdivision; is much more readily brought into a condition for absorption.

With a view of demonstrating the value of the pure drug and its trituration, I selected a number of cases in which both preparations were used at different times in the same subject, and under circumstances as nearly similar as possible. The dose selected was one grain of the pure drug and a one grain trituration with sugar of milk. The dose was administered at bedtime. In the majority of the cases where the pure calomel was given there was no evidence of a bilious stool until the next evening, and in many of them there was no apparent action at all. These same individuals some days or weeks later responded so violently to a one grain trituration that next morning one to five bilious stools resulted; and in one, who had not responded readily to the one grain pure, there was such a large number of evacuations produced that measures had to be used to check the bowels. This may be considered a mere matter of coincidence, but my clinical experience teaches me that one grain of thoroughly triturated calomel is worth an equivalent of five to ten grains of the untriturated drug. A simple mixture of calomel and sugar of milk will not produce any better results than the pure drug alone.

When given for its purgative effect, or for its action upon the liver, it is my custom to administer a one-tenth grain trituration every hour or half hour until free evacuation occurs or until one grain is taken; when, if necessary, liquor magnesii citratis is given in one ounce doses until free action is obtained. During the last four years of practice I have not found occasion to use more than one grain of the drug in the same individual for this purpose. A one-tenth grain trituration at bedtime will produce excellent results in small children, except in those who are habitually constipated, when the former method must be used. There is a certain amount of propriety in administering calomel with bicarbonate of soda, as it will prevent the formation of bichlorid and, as calomel is most readily absorbed in an alkalin medium it is synergic.

After administering calomel in a large number of cases and carefully noting the results upon the various organs, I have failed to appreciate the so-called diuretic effects of the drug *per se*. It undoubtedly acts *indirectly* to a slight extent, simply by its general stimulating action upon the emunctories of the entire body thus favoring secretion, excretion, and the elimination of intestinal ptomaines and systemic poisons, all of which act unfavorably upon the secretory and excretory organs when present. In a case of scarlatinal nephritis in a little girl of six years, with decreased amount of urine, calomel in both large and small doses produced no appreciable diuretic effects while the ordinary diuretics acted nicely. A man of sixty-five, showing mitral disease, chronic Bright's disease and edema of the lower extremities would not manifest diuretic effects from large doses of

[1] U. S. Dispensatory, 17 Edit., pp. 695.

calomel frequently repeated, but responded to alkalin diuretics readily. In giving the drug to over one hundred children, in varied doses, I have never noted diuretic effects which could be ascribed to it alone.

Dr. Wm. Pepper has recently reported[2] a case of Bright's,complicating aortic disease, where large doses of calomel were followed by diuretic effects, and where there were manifested no toxic symptoms from its prolonged use in doses of ten grains daily. His experience does not seem to point to its general diuretic action except in large doses, and then it is often uncertain in its effects. While I am still closely observing results in its use, yet I am not convinced that any diuretic action other than a very indirect one is produced by calomel. Typical biliary stools have almost invariably followed the use of the triturated preparation in doses exceeding one-quarter to one-half grain. In some cases there was a regurgitation of bile from the duodenum into the stomach, producing obstinate vomiting. Calomel undoubtedly increases the secretion and excretion of bile by its direct stimulating action upon the cells of the liver. To this cholagogue action is partially if not wholly due its beneficial results in treating diarrheas.

How does calomel act in diarrheas? When taken into the stomach in large doses it is slightly irritating; part of it is absorbed and the remainder enters the intestines where it is further absorbed and possibly may have a slight local antiseptic action. Systematically it acts upon the liver producing increased flow of bile, which enters the duodenum. Bile is nature's antiseptic and acts in neutralizing ptomaines, preventing germ growth, sometimes destroying germs themselves and aiding digestion. It increases peristaltic action and intestinal secretions and thus assists nature in cleansing the bowels by production of free biliary stools. The cause once removed, the cure is apparent. Small doses of calomel act more by a direct cellular impression, by which the cells of the stomach and bowels are stimulated to renewed physiologic activity. The action upon the liver is the same as in large doses, being proportioned to the size of the dose.

I desire briefly to report the results of treatment in one hundred and forty-four cases of all forms of diarrheas which I have noted in my work, all of which terminated successfully under the action of calomel alone and in combination. Seventeen cases in adults, all of which were due to the ingestion of improper food. Diarrhea varied from a mild to a very profuse type. Twelve powders were made from one grain of triturated calomel and one-half grain of podophyllin and one powder given every two hours until free bilious stools were produced. From two to six powders usually gave a curative result—dietetic measures being observed, as in all the cases here reported. No astringents or other medication was necessary.

Nine cases of the so-called bilious diarrhea in adults responded rapidly to one-quarter grain trituraate of calomel every four hours for two to four doses. Only one of these cases proved obstinate and it rapidly reacted to one grain doses of sulpho-carbolate of zinc every hour for six doses.

Sixty-eight cases in children from two months to ten years all received a saline cathartic of liquor magnesii citratis as preliminary treatment. This was followed by a trifuration containing one one-hundredth of a grain each of calomel and powdered ipecacuanha every one to four hours. The action of this combination in controlling the nausea and diarrhea in these cases was marvelous. The saline was often sufficient in other cases, but in those where it was not, the small doses of calomel and ipecac worked excellently. I have seen some cases so obstinate that all other forms of treatment failed, but the institution of this method, combined with strict dietetic and hygienic measures, brought about cures. It also gives me best results in treating adults suffering with diarrhea, nausea, vomiting, cholera morbus, dysentery, and the diarrhea of typhoid fever. One case of slight but obstinate dysentery in an old man of seventy-five years failed to respond to ordinary methods, but quickly subsided under this small dose of calomel and ipecac every two hours.

Twenty-five cases of obstinate diarrhea which had been running some days before consultation, all responded rapidly to a combination containing one-tenth grain of calomel and one grain each of lactopeptin and sulpho-carbolate of zinc given every two to four hours. Four cases of the diarrhea of typhoid fever responded rapidly to this same combination given every four hours.

I have met with twenty cases of diarrhea following excessive use of alcoholic liquors, and in every case have succeeded in getting absolute results in one to three days by administering a combination of one-fiftieth of a grain of calomel and one-hundredth of a grain of podophyllin every three or four hours as required. Two to four doses answered in several, while others proved rather obstinate but responded in the end.

In summarizing the results in these one hundred and forty-four cases, I am not presenting entirely new facts to you, but merely adding clinical testimony to the true efficiency of calomel and its eliminative power as contrasted with the evil routine methods of astringency and opium in treating diarrheas. These cases are not selective, but followed each other in succession. It is my general experience that diarrheas will respond more rapidly to doses varying from one-tenth to one-hundredth of a grain of calomel, thoroughly triturated, than to larger amounts. While these small doses may seem homeopathic to many they are not presented as such, but are given with a full knowledge that they will give certain clinical results which can not be obtained from larger amounts.

DISCUSSION.

Dr. Chapman, of Louisville, Ky.—I would like to ask Dr. Stewart if I understood him correctly; that is, if he considers calomel, in these small doses, one-tenth of a grain to one-fifth of a grain, as a germicide.

Dr. Stewart—For the information of the Association I would be glad to answer it. I do not consider that calomel in this amount will act directly as a germicide, being entirely too small in amount. I am a believer, as I stated in the paper, that the small doses act more by a direct stimulating action upon the cells of the gastro-intestinal tract.

Dr. Didama, of Syracuse, N. Y.—May I also ask a question? Is it not possible, also that these doses are converted into bichlorid? Many of us have been treating these things with small doses of bichlorid every two or three hours with wonderful effects, such as the Doctor had with one-tenth grain of calomel. The large doses of calomel we would expect to have more effect than small doses.

Dr. Hare, of Philadelphia—There are one or two points in the Doctor's paper which interested me. I think that the clinical results which the Doctor has had in the administration of calomel are just such results as we have all had. His paper is simply an interesting contribution confirming the experience of other physicians, summing up their experi-

[2] The Medical News, Dec. 15, 1894, pp. 647.

ence. There are one or two statements which he made in the beginning of his paper which interested me, and I ask the following questions, not with the idea of criticising, but of being instructed. He stated that there was a possibility of a certain amount of the mercury being converted into the bichlorid of mercury. The results of my studies upon this question I have given in the columns of the *Therapeutic Gazette*. The laboratory investigations which I have made have established beyond peradventure that calomel is not converted into bichlorid of mercury. There is only two-tenths of 1 per cent. of hydrochloric acid in calomel, and it has been proved beyond all cavil that the amount which is changed into bichlorid is infinitesimal. On the other hand, clinical evidence would seem to prove that it *is* converted into bichlorid, because every investigation of very much note that has been made has proved, at least in the lower animals, that calomel is absolutely without effect in producing a flow of bile, but hydrochloric acid does produce a flow of bile. The question as to how calomel does act, whether it is changed by the alkalin juice of the intestine, or whether it acts as calomel or as mercury is unsettled.

The statement I am interested in is the statement of the Doctor that calomel is "adulterated" by bichlorid. I do not suppose he meant that bichlorid was employed as an adulterant. A very able chemist of Philadelphia, in the last few months, has carried out for me a series of studies in this matter. In no instance was he able to find that there was any contamination owing to the presence of bichlorid of mercury. We might have some oxid of calomel, but there was no single instance in which bichlorid of mercury was found, and I was particularly on the heels of bichlorid of mercury, because I wanted to find out whether it was the bichlorid of mercury which contaminated the mercury, or whether it was the calomel which produced the bilious stools in administering the drug.

DR. STEWART.—In answer to the first question that was asked, Is it not possible that the bichlorid was the drug which produced the results and not the calomel, I think in my paper I stated clearly that all that was theoretical. Together might be grouped the question, both of the gentleman who preceded Dr. Hare and that of Dr. Hare himself. My own belief is just as Dr. Hare has said, that there is very little of the calomel itself converted into the bichlorid in the stomach. That is all theoretical. Now comes up a question. Is there a difference between a chemic reaction conducted in the laboratory and that conducted in the stomach itself without outside interference? That is, is not a strict chemic reaction in all probability slightly different from that which is produced by what might be termed a chemico-physiologic action in the stomach? It is well known that if we interfere with the nervous supplies of any part we will have one of two results, namely, over-activity of that part or decreased activity of that part, and it is my own belief that in interfering with the stomach by operations, we interfere more or less with the active secretion of the stomach. Clinically, when I give calomel to my patients in one-tenth of a grain I do get the bilious stools. I can not say that the action comes from the calomel or the bichlorid; it may be one, it may be both, it may be either. In regard to Dr. Hare's other point, namely, in regard to the possibility of contamination of these different products by the bichlorid; my experience in the examination of these preparations has been different from those of the gentleman whom Dr. Hare quoted. I have found bichlorid present in calomel, due either to the improper drug being used or insufficient care being taken in manufacture, or else due to chemic change occurring afterward. I am not quite certain as to the authority quoted in a late number of the United States Dispensatory, in which facts are given which show us that calomel is subject to the presence of large quantities of bichlorid of mercury, and where one case is reported and the authority given for it where poisonous effects were presumed to occur from the use of calomel. This whole matter of the action of calomel in the gastro-intestinal canal is theoretical.

## SOME POINTS IN THE ETIOLOGY OF PULMONARY TUBERCULOSIS.

Read in the Section on Practice of Medicine at the Forty-sixth Annual Meeting of the American Medical Association at Baltimore, Md., May 7-10, 1895.

BY FRANK S. PARSONS, M.D.

EDITOR OF THE TIMES AND REGISTER, PHILADELPHIA, PA.

In considering the subject of pulmonary tuberculosis, and in endeavoring to support a theory deduced from etiologic facts, which tends to show that the almost universally accepted germ cause of this disease is quite secondary in its influence, it must be admitted that, while it is evident to my mind the ground taken is not irrelevant, much opposition is to be expected.

Most physicians recognize, in certain individuals, a pre-tubercular condition; meaning by this term that in such persons who subsequently develop tuberculosis an abnormal condition exists, which, while symptomatic or suggestive of consumption, does not give that evidence of the disease which renders the diagnosis absolute; *i. e.*, the demonstration of tubercle bacilli.

It can not be denied that the tubercle bacillus plays an important part in the phenomenal expression, if not in the etiology of tuberculosis, but facts are daily being brought to light which tend to prove that the bacillus alone is as inefficient as a grain of wheat is ungerminative without sunlight, air and moisture.

When one considers the impunity with which colonies of tubercle bacilli are probably taken into the system of the majority of persons, we must fall back on the certainty of a preëxisting condition, which, when present, offers favorable influence for the development of the bacilli, on which the latter depend for support, and without which the germ is rendered inert, even though it may exist in the blood.

Hardly an autopsy is made wherein it is not seen that some time during the life of the subject, tubercles had been present in the lung, or in other tissues of the body, which tubercles had resolved or had been discharged as evidenced by cicatricial repair. We know to obtain cicatricial repair of lung tissue a suppurative process must have coexisted, and that suppuration never takes place where there is not interference with, or stasis of the circulation of a part involved. In other words, there is a loss of normal correlation between the supply of arterial blood, carrying oxygen and nutrition to the part, and the venous blood, bearing away the carbonic acid gas and waste tissue elements.

Essentially, then, perfect tissue repair is one with perfect circulation, and conversely, any stasis to the circulation prevents perfect repair. Any suppurative action must have origin in an obstruction to circulation in the part affected, and resolution, occurring during any stage, depends on the reëstablishing of normal correlation in the entire circulation of such diseased tissue. Abscess formation is nature's way of ridding tissues of abnormal waste when the circulation is impeded.

Circulation in the animal system is a complex phenomenon, physiologically of two kinds: afferent and efferent; anatomically of three kinds: arterial, which is superabundantly generous for nutrition; venous, which is inadequate for the removal of all the excess; lymphatic, which supplements the office of the veins in removing waste. A vigorously active lymphatic system precludes danger from tissue stasis in rapidly wasting parts, while inactivity of the system implies obstruction.

We may logically distinguish the lacteals and lymphatics as belonging to different systems. It is true that both character of vessels hold pabulum, a fact which does not argue against the lymphatic as being a system, the office of which is purely emunctory; for the pabulum found in these vessels, that is

not excreta in the strict sense, is so in significance being an excess of nutritional material which would speedily assume the form of an irritant were it not removed to a new situation as implied in its restoration to the general circulation.

The lymphatic system, excluded from the lacteals being accepted as primal emunctory organs, it must follow that glands like the pancreas, liver, kidneys, etc., must be considered as secondary or excremental emunctories.

Tubercle is first met with where lymphoma or lymphangitis has altered the correlative relations of the lymphatic system, and its meaning is that obstruction exists.

It is to be argued that, primarily, tubercle is a thing having no objective nature and it can be similarly said of the tubercle bacillus. Tubercle not being an objective must be a subjective condition, the subjective lying primarily with a perversion of the lymphatic system.

We may now also see how default in lymphatic action is the starting point out of which may arise many phenomena of disease, and that tuberculosis is in reality not a disease but a symptom—a symptom of lymphatic disturbance or stasis. This fact is proved by the analogy between lymphoma or surgical tuberculosis and phthisis or tuberculosis of the lungs.

What, then, is the cause of lymphatic stasis leading to a condition which may result in tuberculosis?

We know that an irritation acutely expressed, as in the case of burns, induces active inflammation. We also know that irritation of a mild degree, applied continuously, induces chronic inflammation, as in the case of gastric catarrh from the alcoholic habit. We have seen how irritation, increasing the flow of blood to a part, tends to cause hypertrophy of that part; yet, that so long as the efferent vessels carry off the additional waste there is no tendency to ulceration, or retrograde tissue metamorphoses, other than that induced by the contraction of new tissue formation, and the secondary cutting off of the blood supply. But as soon as the correlation between the efferent and afferent vessels becomes interfered with, and the waste products are left in the part, ulcerative and suppurative changes take place.

The direct cause of lymphatic stasis may lie in an excessive amount of waste material in the blood, choking up lymphatic circulation. These waste elements may differ in character and only act as local irritants from the fact that they are in an incompetent position in the circulation for nutrition, as evidenced by the attempt nature makes to excrete them.

It is a fact that in phthisis the venous blood is brighter than normal. This gives evidence that oxygen imbibed by the red blood corpuscles in the lungs is not properly oxidized in the tissues, and passes over through the capillaries in a free state. We know that the blood contains phosphorus in an oxidizable form, and that oxygen has a great chemic affinity for phosphorus; hence it is not out of reason to infer that, in this disease there is a deficiency in oxidizable phosphorus. This statement is borne out by the results of phosphorus feeding to phthisical persons, when the venous blood soon assumes its naturally darkened hue.

It is on complete oxidation in the blood that the healthy cellular life of the animal depends. Deoxidation means death. Life is opposed to death, and nature is continually striving to preserve the former by preventing deoxidation and ridding herself of such animal cells as have become deoxidized. As soon as deoxidation in a cell takes place, that cell becomes devitalized, and is crowded out of its relation with living cells. If it can pass out through the excrementory channels, as nature intended it should, no harm will result, even if many bacteria are feasting on the defunct cell. If it can not pass out, but is held by stasis, or obstruction, or overcrowding, in its relation with other cells which have become devitalized we soon have a collection of dead material causing irritation to the nerve elements of surrounding tissue, and inflammation results.

I incline to the opinion that we have: 1, a stasis of waste elements in the lymphatics; 2, a nerve cell paralysis due to the stasis; 3, increased blood supply to the part as a result of the paralysis, and which, owing to the existing obstruction, brings about the phenomenon inflammation. All this is prior to the introduction of a tubercle bacillus.

When the tubercle bacillus enters the system of a person presenting a favorable cultivation ground for its development (which cultivation ground may be recognized in a lymphatic stasis) the attack is directed only to devitalized cells. Of this point we may feel quite certain, inasmuch as oxygen destroys the bacillus, and a thoroughly oxygenized blood cell will resist the attacks of bacilli. Bacteria, when no obstruction to waste elements exists, pass out of the body through the various emunctory organs. Their products of toxins and toxalbumins are likewise eliminated without harm to the individual. Animal experimentation, for the production of tuberculosis by injections, I feel, is of little value, inasmuch as only such animals are affected by injections as would develop lymphatic stasis from any sort of irritation mechanically applied, and the cultivation ground is at once presented.

It must be rationally argued that the favorable medium for one kind of bacillus may not be identical with that of another and, hence, various forms of germs may appear in different diseases, not because the germs are specific, except as diagnostic phenomena, but because they develop and multiply in different media.

It is to be assumed that a cause for lymphatic obstruction may be found in an incompetent excrementory organ, which theory is perfectly in accord with the acknowledgment of the lymphatic origin of tuberculosis. Such organ may be the seat of congenital or acquired incompetency; hence our cases giving family histories of phthisis.

Acquired consumption may arise from a pneumonia, the frequent "taking of colds," a bronchial catarrh and other respiratory disorders in which the lymphatic circulation of lung tissue is obstructed to a greater or less extent, and the blood cells devitalized. Cure depends on the restoration of eliminative function in these lymphatics and in building up the general system by restoration of impaired oxidation.

The question whether pulmonary tuberculosis may be communicated by contagion, or infection, does not rest with the proving that a specific germ is found in this disease, for we must know that unless a favorable medium is presented such germ will not develop, and that to obtain this medium there must be a previous condition to be recognized as pathological.

The conclusions regarding the etiology of pulmonary tuberculosis which I have endeavored to show in so brief a paper may be summed up as follows:

1. Pulmonary tuberculosis should be considered as primarily due to a lymphatic stasis, of congenital or acquired variety, depending on incompetency of excrementory function, and deoxidation of blood cells.

2. That the tubercle bacillus should be regarded as a phenomenal expression of the disease, only because a favorable medium exists in the lymphatic stasis for its cultivation, and, hence, symptomatic rather than etiological. Its development is often some length of time after the stasis is apparent, as evidenced by the so-called scrofulous condition existing in most phthisical persons.

The great danger in considering the etiology of pulmonary tuberculosis lies in the fact that we are too prone to lose sight of the chemic composition of man, and the fact that disease is but a chemic decomposition, in the universal furor after a specific germ, the phenomena of which may be observed in various media in and outside the body.

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## A REPORT OF THIRTY-FOUR CASES OF PULMONARY TUBERCULOSIS TREATED BY THE METHOD OF CARASSO OF GENOA.

Read in the Section on Practice of Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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In the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for Sept. 1, 1894, is a selection from the *Cent. f. Bakter u. Parasitenk*, by Carasso, of Genoa, in which occurs the following: "The author believes that Mentha exerts a direct bactericidal action upon the bacilli in the respiratory tract and that, by absorption into the circulation, it acts as a general disinfectant. Creasote acts beneficially in pulmonary tuberculosis by increasing the appetite and favoring nutrition. It also possesses some action on the secondary inflammatory exudates, favoring their absorption." Carasso's method of treatment in detail is as follows: a piece of linen cloth, ten centimeters square is folded to make a pad, five centimeters by two centimeters. By means of tape this pad is secured in contact with the nostrils. The pad is to be worn day and night and only to be removed at meal times. It is to be moistened with five or six drops of peppermint essence four or five times a day. The nostrils are to be greased with vaselin for the first few days to prevent irritation. The patient is instructed to take eight or ten deep inspirations with closed mouth; retaining the air as long as possible. After ten or fifteen minutes rest this procedure is repeated, and so on through the day.

The following mixture is given internally:

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| Pure beechwood creasote | 8. |
| Alcohol | 550. |
| Glycerin | 250. |
| Chloroform | 20. |
| Essentiæ Menthæ pip | 8. |

A teaspoonful every three hours in a half glassful of water. In certain cases the mixture may be further diluted with sweetened water, or the dose may be reduced. The nutrition is favored by the method of overfeeding, Two or three liters of sterilized or boiled milk are given daily; together with plenty of meat cooked to taste; and with the addition of 400 or 500 grams of good wine.

All hygienic precautions are to be observed. The patients are instructed to carefully disinfect their expectoration, thus preventing re-infection.

The remarkable feature of Carasso's communication is the clinical report of the cases subjected to this treatment. In all cases the physical diagnosis was confirmed by finding the tubercle bacilli in the sputum. Many of the cases were well advanced in the disease, though no record is made of cases in which the lung destruction had advanced to the formation of cavities, recognizable by physical examination. In all, forty-four cases are reported. Of these there were six deaths and thirty-eight recoveries. The average duration of the treatment in these cases was sixty days. The recovery in all the recorded cases seems to have been permanent.

Although there are some points in his treatment which seem to me unphysiological and contrary to reason, nevertheless in view of the remarkable percentage of recoveries reported, I decided to give the method as fair a trial as I could and to report the result. I was the more readily inclined to such action because I have had the best results among the cases of pulmonary tuberculosis that I have treated in those in which has been combined the inhalation of menthol in petroleum oil and the internal use of increasing doses of creasote.

On Oct. 1, 1894, I took charge of the "consumption ward" of the Erie County Hospital. In the male ward there were at the time thirty-four cases of pulmonary tuberculosis in all stages of the disease. Most of them, however, further advanced than those reported by Carasso. In all but six cases, cavity could be demonstrated by physical signs. In four of these six there was infiltration of the upper lobe of the right lung; in two of the left. In all of these six the process was active and there was rise of temperature in the afternoon of a mild degree.

When I came on duty all of the patients were taking pure cod-liver oil, some of them whisky in addition to the oil, and two of the six mentioned above were taking gaining doses of creasote. No inhalations of any sort were in use. The two patients who were taking the increasing doses of creasote were gaining slowly in weight and had been doing so for three weeks previous to my taking charge.

I placed all thirty-four cases on the treatment outlined above, except that no wine was given. In some of the cases which seemed to require stimulation, whisky was used.

I intended to keep up the treatment for three months, but I have to report the melancholy result that at the end of two months all of the cases were doing so badly that I had to stop the treatment entirely or modify it markedly.

It is interesting to note that the two cases which were improving on the increasing doses of creasote continued to improve for a week, *i. e.*, continued to gain in weight but by the second week they were losing with the rest and continued to lose as long as they remained on the Carasso treatment. They both began to change so rapidly for the worse that at the end of one month I returned to their former mode of treatment, keeping up, however, the peppermint in-

halations. After the return to the creasote treatment these two cases began to improve again, and when I went off duty Jan. 1, 1895, they had gained, one four pounds and the other five. All of the thirty-four patients complained of the gastric distress occasioned by the medicine; several of them were forced to actual vomiting. One patient complained that the inhalation pad interfered with his breathing, even to the point of distress, so that we were forced to substitute deep inhalations three or four times daily without the constant use of the pad. The other thirty-three all spoke of the greater ease with which they breathed and the less frequent attacks of coughing. The sputum was not materially diminished in amount in any case, but the coughing spells were diminished in number. In the light of the result in these cases, let us review the treatment suggested.

In the first place, the inhalation of the peppermint seems to have a decidedly beneficial effect in relieving and improving the character of the cough. If continued for a sufficient length of time I do not doubt that it would change the character of the sputum and probably lessen the amount of the sputum. As to the rest of the treatment, let us examine it critically, especially in the light of the gastric disturbance that it caused in all of the thirty-four cases that I had under observation.

The directions are; 2 or 3 liters of sterilized or boiled milk are given daily, together with plenty of meat cooked to taste. The medicine is given every three hours in a half glass of water, *i. e.*, in about 125 c.c. If given every three hours in the twenty-four, that would be eight doses, but the sleep of the patients was not disturbed and they received generally six doses in the twenty-four hours, none being given between 9 P.M. and 6 A.M. Thus you see there will be given to the patient in the twenty-four hours, especially if the 400 or 500 c.c. of wine is also taken, from 3,250 to 4,250 c.c. of fluid, that means about a pint of fluid every three hours between 6 A.M. and 9 P.M., with an extra pint in the night. Now we are advised to add to this, "plenty of meat cooked to taste."

Such treatment would be apt to produce disturbance in a normal stomach. Supposing that two or three times in the twenty-four hours meat is given. Study of the gastric contents has shown among other things that the presence of lactic acid is very apt to overcome and destroy the normal hydrochloric acid of the gastric juice, therefore meat and milk are really incompatibles in gastric digestion.

Moreover, the administration of food in the amount proposed at the intervals suggested does not allow the stomach to have the physiologic rest that nature demands. As a matter of fact, in most tubercular patients the stomach is dilated, is slow in the digestion of foods and often requires the addition of hydrochloric acid rather than the administration of anything that would tend to overcome or destroy what may be already there. Thus we see in the food suggested, even without the medicine, there is reason for the gastric disturbance that occurred in all of my cases. Now let us analyze the prescription for internal use; of creasote and essence of peppermint each dose contains the small amount of 0.05 Gm., a little less than 1 minim, the daily amount administered being not more than 0.30 Gm. of each, that is about 5 minims. Each dose has combined with it 0.10 Gm. (about one and a half minims) of chloroform and 1.20 Gm. (about twenty minims) of glycerin and enough alcohol to make up the teaspoonful. Every one of the constituents of this prescription (with the possible exception of the peppermint) is irritant to the mucous membrane even when diluted with considerable water.

I tried this method of Carasso's with several private patients also. In every case except one, the gastric distress occasioned by the prescription was complained of.

The conclusions that I should draw from my observation of the trial of Carasso's method are: that the internal treatment is unphysiological and is very apt to cause disturbance of digestion, the very thing above all others that is to be avoided in the treatment of tubercular patients; that the inhalation of peppermint is valuable and deserves further investigation. There is now in process of erection at the Erie County Hospital a special building for the care and treatment of patients suffering with pulmonary tuberculosis. In this building we are to have two inhalation chambers so constructed that the patients are surrounded with air saturated with the agent to be used for medication of the respiratory passages.

At some future meeting I hope to be able to make a report that will show better results from a more rational mode of procedure.

DISCUSSION.

DR. AMOS of Baltimore—I should like to speak for a few moments on Dr. Rochester's paper. About fourteen months ago Dr. Osler, of Johns Hopkins Hospital, gave me the care of the treatment of the tuberculous patients in the out-patient department for the purpose of trying Carasso's treatment. In all I have had some eighty-five to ninety cases of tuberculosis, and in these cases about sixty have been treated now for twelve months. In all respects I may say that Dr. Rochester's conclusions tally with my own. I was startled by reading the extract from Carasso's article, in which he laid claim to the fact that under this treatment not only was there amelioration of all the symptoms, in no matter what stage of the disease the patients might happen to be, but that he also claimed that in thirty-nine cases, some of which had cavities, if I am not mistaken, there was a disappearance of the tubercle bacilli in all cases in from thirteen to sixty days. In all cases that I treated, the tubercle bacilli were demonstrated in the sputum. In only two cases I can vouch for the disappearance of the tubercle bacilli. One occurred after the patient had been in the Adirondacks for three weeks, and the other occurred in a working girl here, who had no sanitary surroundings, this last being really the sole case in which the treatment itself might fairly account for the satisfactory result. In over 50 per cent. of the cases there was an increase in weight for a short time, and then a diminution in the weight, so that in order to keep the weight up, the treatment was modified and increasing doses of creasote were given instead of stationary ones, these sometimes running as high as 14 to 15 minims three times a day. These cases were in the out-patient department, and it is very difficult to carry out any system of diet in a dispensary. The fact that the amount of liquid necessarily given in the twenty-four hours would disturb even the healthy normal stomach is a great argument against Carasso's treatment. We contented ourselves with trying to have super-alimentation, with more solids and less fluids. I do not see how it is possible for Carasso to verify his results in pulmonary tuberculosis, if the disease is the same in Italy as in this country, and I can not imagine how he can get such results as he claims to have obtained.

In all his cases there was tuberculosis only of the lungs. There was no tuberculosis of any other portion of the body. But in some of my cases there were lesions of other organs. I should say that in over 75 per cent. of the cases I have treated there was only pulmonary tuberculosis. The lesion occurred chiefly in those cases in which there was only a slight infiltration of one apex or the other. In one case there was a notable diminution in the number of bacilli in about three weeks, with a cessation of the night sweats, and improvement of the appetite, but no gain in weight.

In some of the cases that have now been on treatment for

fourteen months they still cling tenaciously to the inhalation night and day, although they are almost on the point of death. The oil of peppermint, however, seems to relieve them more than anything which I have been able to give them in the way of internal medicine. I am now trying to find the oil of peppermint in the urine or any other secretions. I have not done any active work on this, however, for the last three or four weeks.

DR. DENISON, of Denver, Colo.—I have a great deal of experience which leads me to indorse Dr. Rochester's conclusions for the use of creasote, and I have stopped a great many patients who were using creasote, because of the gastric disturbance which resulted. I came a great way to ask Dr. Paquin of St. Louis, what treatment he had carried out with his horse to get his horse blood serum in order to induce an immunity by its use in tubercular cases. I am sorry he is not here. He issued a paper in which the case was presented, a great deal like the play of Hamlet with Hamlet left out. The milk in the cocoanut was not there. What had been done to those horses to create the immunity-producing serum? We ought to acknowledge that we have come to the conclusion that there is no cure of tuberculosis except what is accomplished through strengthening the resisting power of the individual, or creating an immunity in the individual blood. So far as strengthening the power of resistance in the individual, there is no remedy equal to climate, and that connected with the lessened pressure of the air as we have it in the Rocky mountain region of this country. This question is settled in my own mind by the experience of twenty-two years with 3,000 cases.

I believe, gentlemen, that we are on the road to curing tuberculosis through the means of creating immunity in the individual. I have had 137 cases that I have treated with tuberculin; there were 27 cases of exsection, two or three of them cases of total exsection, who are now living and were treated two or three years ago on the average, and consider themselves pretty well. There are many of them claiming to be in perfect health. I have not had the bad experience that the fear of the profession would indicate that physicians would have in using that remedy. It is a severe remedy, and it needs discrimination, and the most careful diagnosis, in order to be successful.

DR. KARL VON RUCK of Asheville, N. C.—I have been very much interested in the two papers which have been read, and in regard to Dr. Parsons' paper I only wish to say that I do not believe that tuberculosis of the lymphatics and glandular apparatus as a rule precedes tuberculosis of the lungs. I do not think it is possible that suppuration can be produced by stasis of the blood, and do not think it is worth while to spend much time on that point. The production of tubercular tissue is not due to stasis, but is due directly to the tubercular bacillus, and the experimentation in this respect is so complete that this question is settled. I am glad to see that Dr. Rochester has so carefully followed up this work. I had preparations of peppermint and menthol made, several years ago, and I came to the conclusion that I would not take up this other treatment in their stead. Dr. Paquin is expected to be here, and I do not wish to say very much about his work, any more than that I have been in St. Louis, and have looked up his work, and he has given me every opportunity of doing so. The method of procedure followed, to produce what he calls "immunity" in the horse is simply the injecting of culture fluid of the tubercle bacillus in small quantities into the jugular vein, and then taking the blood serum and treating human beings with that. I do not think that this work has progressed so far as to justify any conclusions one way or the other. He has never shown his horses to be immune; indeed, I do not believe that there is such a thing as immunity to be induced by that treatment; it is simply toleration. The Doctor was kind enough to give me some of his serum, and I took that back with me and gave it to a doctor for experimentation, and he injected a number of guinea pigs that had been infected with tuberculosis. Our guinea pigs promptly died within forty-eight hours. We found upon bacteriologic examination that the serum was full of bacilli, which are now being cultured. We have thought best to venture no more guinea pigs on the experiment, but we are injecting a horse, and we propose to introduce a serum which will be at least safe upon animals.

I wish to indorse the statement of Dr. Denison as to the great value of climatologic influences. Many cases can not be cured no matter what we may do; but I would impress upon you the careful management of the cases, so that they may have the greatest benefit, not only from the climate, but also from the other treatment, so as to take advantage of all the means offered in the direction of health.

DR. PARSONS—It seems clear to my mind that the outline of my paper is perfectly justifiable and logical. I regret that it was not more in detail. Regarding the treatment, I wish to say a word. I think we should not forget that catarrh of the stomach is a coexisting trouble with tuberculosis, and is a disease which should be specifically treated. I do not think that creasote has any beneficial influence on catarrh of the stomach; in fact, it is inclined to produce it, and should not be given internally. I have had very little beneficial influence from creasote in my experience. Climate is an essential treatment, and above all a regeneration and re-oxidization of blood cells is necessary.

DR. ROCHESTER—Mr. Chairman, I should like to say a word, before taking up my own paper, in regard to the position taken by Dr. Parsons, though I think he has been thoroughly answered by Dr. von Ruck. He says that there is a condition precedent to the development of tuberculosis, and this he calls a "pre-tubercular condition." Where he has such a state, it will be found upon physical examination that there is already tuberculosis present, even although it is not possible to demonstrate the bacillus, or there be no cough. I think, moreover, in all cases of pulmonary tuberculosis there is associated therewith tuberculosis of the lymphatic system. That I think has been clearly proved by observations of Winthrop on the subject in the New York Foundling Hospital, when in 125 autopsies there were found tubercle bacilli in the lungs themselves, though some of these cases did not present any symptoms of pulmonary tuberculosis. The tuberculous poison is taken in by the respiratory tract. As far as regards any pre-tubercular state, I think the only pre-tubercular state is anything which in any way reduces the resisting power of the individual, any weakness, any anemia whatever. Personally, I do not believe in heredity in tuberculosis, except that we may inherit a poor constitution, and excepting also those rare cases, of which I believe not more than one in ten have been recorded, in which the fetus is tubercular. There is inhalation from the mother, and the contraction of poison from nursing at the breast of the tubercular mother. If we examine cases of tuberculosis in children who are supposed to have inherited this disease, we find that in the majority of instances it comes from the maternal line. This means that the child is constantly present with the mother and subject to contagion from her. I was glad to hear Dr. Amos's report. There is one point I desire particularly to emphasize. Several things have been said against the creasote treatment. I wish to stand up here and defend the increasing doses of creasote just as strongly as I can. By gradually increasing the dose, starting with 1 minim, and giving particular attention to the patient's general condition, there should be steady improvement. As to the irritation of the stomach by creasote, this may result if it is given in water, but I have found that it can be administered in claret wine, or in some of the clarets of this country—the California clarets acting very nicely, and being cheap and within nearly everybody's reach—or we can give creasote in mucilage of acacia, and have very excellent results in spite of the slight irritation of the stomach.

## THE TREATMENT OF TUBERCULOSIS BY INJECTIONS OF IMMUNIZED BLOOD SERUM.

Read in the Section on Practice of Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY PAUL PAQUIN, M.D.

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Since the discovery of the specific nature of infectious and contagious maladies, many members of the medical profession have devoted their energies toward finding a specific treatment for each. Their efforts have been crowned with success in at least one of the most dreadful maladies of mankind, namely, diphtheria, and this was accomplished in the line of natural law. I have the pleasure to report that under the same law, I have obtained by experimentation and in therapeutics, very promising results in the treatment of tuberculosis.

Following the researches of various foreign and American authorities on the action of certain physi-

ologic products of the animal body on disease microbes, I have for some years experimented with blood serum of various animals on microörganisms in general, and more recently with horse blood serum on the bacillus of tuberculosis. The results of my experiments and the various tests which I have made in the human family, have been such as to warrant the expression that, in immunized horse blood serum, there exists the principle with which to fight tuberculosis in all its forms.

THE NATURE OF TUBERCULOSIS.

Tuberculosis is, without question, the most universal disease existing. It may affect anybody in any climate, and it is found sometimes to have existed in a mild form in people who die of other maladies. An Italian medical expert has demonstrated that a large portion of people living without any manifestations of tuberculosis whatever are, nevertheless, infected in the glandular system of some organ or other. I think it is Tizzoni, who has proved this fact by post-mortem examinations of a large number of people who had died from the result of accidents. This indicates that tuberculosis may have been a long time working in the constitution before any symptom can be detected, or before the patient can notice any trouble. We may conclude, therefore, that pulmonary consumption may arise from tuberculosis previously existing in the glands, and possibly it frequently begins thus instead of from direct infection by inhalation. Any way there seems to be no question whatever, that tuberculosis may exist in the system in a limited way, concealed for indefinite periods, and that the power which we call vital resistance, namely, the physiologic cellular property of the organization to resist the invasion of germs, prevents the bacilli from accomplishing serious disorganizations, until such time as certain parts of the being are weakened by some process or other, such as bronchitis, la grippe, pneumonia, typhoid fever, colds so called, etc., or when some organs are congenitally feeble in their cellular, germicidal (or defensive) powers, and thereby predisposed to succumb more easily to bacterial action. The nature of tuberculosis then is such, that in its incipiency, when the first morbid process begins in the glandular system, in most of the organs except the lungs it can scarcely be detected, and even in the respiratory organs it is exceedingly difficult under most circumstances to be positive of its existence. Most minute, rigid and repeated examinations are necessary for even a doubtful diagnosis if we wish for absolutely clear symptoms for it. When we consider this fact in the presence of the usual clinical histories of the patients presented to the medical practitioner, it will be obvious to every one that the beginning of the treatment of this fatal malady is rarely when it is yet in its incipient form. It is almost always when some marked structural changes have already occurred in some important organ or several of them, that the opportunity for the diagnosis of tuberculosis is offered. Even if the bacilli are just making their appearance, it does not signify incipient tuberculosis as so many practitioners consider it; the disease is then already in an advanced stage of tissue alteration. The bacilli do not appear in the sputum before changes occur in tissue. Indeed, I feel sure that it scarcely ever occurs that a case of truly incipient tuberculosis, whether of the lungs or other organs, is purposely brought to a physician for examination, and when it does occur, it is either not recognized or the physician fears to express his suspicion.

With these facts before our minds, we will be able to appreciate better whatever value or importance may be attached to the results that my colleagues and myself have obtained in the treatment of tuberculosis by the injection of blood serum, and what part, if any, the glandular system plays in this form of therapeutics. Every one of our cases were in a more or less advanced stage of the disease.

In January last, I presented to the St. Louis Medical Society, a report of twenty-two cases treated with immunized horse blood serum, in all of which there had been some improvement from injections practiced once a day on an average of two months. In some instances weight had increased to a remarkable degree, and the symptoms of the disease were greatly improved. It was, at that early period, the increase in weight was particularly striking, it having advanced rapidly to a degree beyond all expectations under the circumstances. These patients were at the City Hospital and the poor-house, where the diet is exceedingly meager, and for a time were treated against their will, and were discouraged in it by some one or other, so that there had been neither dietetic or mental influence playing favorably on their physique. All of them improved in weight, varying from one and one-half to twenty-two pounds in three to eight weeks. All of the twenty-two cases reported then are living to-day; all of them have improved more or less since, and more than half of them have been discharged from the City Hospital, considered sufficiently well to do work. These cases were in the second and third stages of the disease, had tubercular processes in one or both lungs, some of them with more or less infiltration softening spots, and some with large cavities. In several cases there had been, to the beginning of our treatment, more or less severe hemorrhages, and in every case emaciation was more or less pronounced. Bacilli of tuberculosis were present in all, and very numerous in the majority. The average number of consumptives in the St. Louis Hospital is between forty-five and fifty. We began with thirty cases, having taken one after the other in two rows of beds regardless of their respective pathologic conditions, which ranged from bad to hopeless. Two almost in the last gasp when we began, died within three or five days. Six were discharged because they rebelled the first or second week. Twenty-two we kept and treated almost daily from November 29 and December 1 to January 26, when I made my first report to the St. Louis Medical Society. The wards adjoining the patients treated with blood serum and where an average of thirty to thirty-five patients are constantly present, new cases coming in as the old ones die, were subject to the ordinary treatment. The number of cases in the latter wards between Thanksgiving Day, November 29, and April 15 was over thirty, while the deaths among our twenty-two patients were not only *nil*, but half of them have, as stated before, been discharged on their own request to go home or to work. These patients received no other treatment whatever than blood serum, and they were subjected to the most trying tests to see the actual results. In the first place, after the symptoms of tuberculosis had subsided to a positive degree and the health improved unmistakably, as will be explained farther, the serum

was stopped for two weeks, the weight began to decrease, and the symptoms gradually asserted themselves. On the renewal of the injections, the bad features again began to yield. During the course of three or four weeks more of serum treatment, smallpox occurred in the City Hospital. As a consequence, sulphur was burned in the consumptive wards, and repeatedly afterward for some weeks in the wards beneath. My experimental cases were in consequence forced to inhale the resultant acrid vapors, and to shift about in wards with open windows during the most trying, raw and damp weather we have in St. Louis. And yet, the improvement continued, interrupted, to be sure, by such a severe misfortune, but not arrested for any length of time in the majority. The results have been to diminish the germs in number, disintegrate them apparently, alter the morbid secretion materially, clear up infiltrations, arrest hemorrhages, increase the avoirdupois, improve the appetite, arrest the cough very materially if not totally, and induce restfulness and quietness. I have here three cases, two of which have undergone the above experience and one a long interruption of treatment.

In surgical tuberculosis also, sero-therapy is very promising. The following is a report of Dr. Cale, surgeon, on a case he treated:

"I inclose herewith, report of a case of knee-joint tuberculosis treated after operation with your anti-tubercle serum. Mrs. M., age 26 years, mother of two children, the youngest four months of age. History of two tuberculous in her family. Has enjoyed good health until one year ago, when she had some pain and stiffness in right knee. Was treated for rheumatism by some physician until two months ago, when she called another physician, who made the diagnosis of tubercular joint and advised an operation. I was called in consultation and found the right leg slightly flexed, joint swollen, but extremely painful on pressure; there was also ill-defined fluctuation. In fact, the knee presented a typical picture of tuberculosis. The patient had fever and some night sweats and could not sleep without morphin.

"I sent the patient to the Woman's Hospital, and found on opening the joint, the entire capsule in a gelatinous condition, also numbers of rice bodies in the synovial fluid; the cartilage almost dropped from the patella. There was a cheesy tubercular focus on each side of the head of the tibia, which was removed with a sharp spoon. An attempt was made to preserve the condyles of the femur to minimize shortening of the limb, but they were so degenerated that about one inch and a half had to be sawed off. As is my usual method, a drainage tube was inserted, the wound closed and dressed before the removal of the Esmarch. Patient slept well all night without a hypnotic. The dressing was not touched until the eighth day, when sutures and drainage tube were removed. Since that time (six weeks) the dressings have been perfectly dry and needed no change. She has had an injection of 20 drops of serum daily for five weeks, her appetite is good, she sleeps well and is gaining in flesh. The case was a particularly bad one, and had I not intended to use the serum, I should have made a thigh amputation, instead of an exsection of the knee joint. While conclusions can not be drawn from one case, the use of the serum has undoubtedly greatly aided in the progress of this case. I have made a large number of operations on tubercular bones and joints and have seen hundreds of others made, but it is certainly an exception to see such a result practically under one dressing."

### THE PRODUCTION OF THE SERUM.

The production of the serum is based on the known principle underlying immunization of animals. The horse is naturally immune to a remarkable degree to the germs of tuberculosis. It has been possible, very rarely, to inoculate the equine species, but not to produce any permanent disease, except in very rare (doubtful) instances, to say the least. Acting on this knowledge, which I have verified with numerous experiments on the horse, consisting of inoculations of pure bacilli culture, it occurred to me that the physiologic resistance of horse blood serum to the action of the bacilli of tuberculosis and its products, could be so increased by a proper process of immunization as to render it valuable in therapeutics. The results obtained verify apparently, the preconceived notion. In a word, the process of immunization consists of the introduction into the horse of quantities of toxins, regulated by their action on the system, followed by the introduction of germs of consumption, in various states of alteration and dilution.

One of the most important questions with reference to the production of serum, whether it be for tuberculosis or diphtheria, or any other disease, is the healthfulness of the subject used. The horse seems to be the only one used for therapeutic purposes. No animal of this family should be utilized without a thorough examination, and absolute evidence that it is not suffering from some organic disease or other, or from any functional disturbance which may produce any kind of toxic elements in the blood. In any condition bringing forth changes of the physiologic processes in the system, whether it be during the course of an insidious malady, or a readily appreciable disease, or whether it be during the process of recuperation from a pathologic condition of any character, there exist in the blood, elements which, introduced into an alien body, sometimes produce very serious results. And by the way, it seems to me that this point has been overlooked, so far as I can judge from the literature at my command, by the various experimentalists who have produced antitoxin. In my experience, the various untoward phenomena which have been described as occurring after serum injections depend largely on conditions preëxisting or created in the animal. A thorough knowledge of the physiology of the horse is as essential for proper immunization, as a thorough understanding of the strength, nature, dosage, etc., of the agents of immunization. Certain bad results in sero-therapy, such as fever, may usually be prevented by proper care and choice of animals.

### THE SERUM.

The serum produced from the horse, whether its immunity is increased or not, varies considerably according to the subject, according to the immunization process, and according to the number of successive times the blood has been drawn. Consequently, uniform results can not be obtained in therapeutics unless the greatest care is taken in testing the serum obtained after each withdrawal of blood. This is probably true of antitoxins for diphtheria. There occurs a time after several séances of this character, when animal toxins are formed in the blood during the process of recuperation, and these, by injections in the human organization, produce untoward effects. I have seen a high fever from a single injection of 10 drops of serum absolutely free from microörganisms and other products, and I have also seen the development of urticaria, erythema, and symptoms of arthritis and disturbances of the kidneys produced by serum which chemically seemed, and microscopically was, absolutely pure.

### DISCUSSION.

DR. PAQUIN said—The operation of immunization is exactly that relied on in obtaining antitoxin for diphtheria. It consists, briefly, of toxin injections until the fever ceases to rise; first of culture fluid, then injection of dead bacilli,

until that ceases to produces a fever; then of living bacilli until this causes no fever. When we do not produce any reaction to the germs, we consider that the horse is immune.

DR. VON RUCK of North Carolina—As to the immunization of the horse, I understood from Dr. Paquin that he injected, in the first place culture fluid, subsequently dead bacilli, and then the virulent bacilli. Now, we know that a horse can acquire tuberculosis; in fact, there is no animal that is immune to tuberculosis. I have very serious doubts as to the propriety of injecting the living bacilli into the horse, without killing the horse and making the most painstaking bacteriologic examinations. I would by no means be understood that I wish to throw cold water on the merits of the investigation. On the contrary, I realize how difficult this work is; how many obstacles there are in the way to discovering a true path where no one has yet trod. Still, I maintain that the therapeutic application of serum in the human system is entirely premature, as the experiments are not complete. I hope that the treatment will be shown to be of value; and in our laboratories in Asheville, experiments are now being made with this serum. One of the specimens of serum that Dr. Paquin kindly sent us contained cocci, and we could not think of using it in a human being. As to the results that are shown they are certainly in some respects very encouraging, but I must call your attention to the fact that those cases have all been in more or less advanced stages; they are phthisical conditions rather than tubercular cases. If this is the specific medication, just the same as in the treatment of diphtheria with serum, and there are pathologic changes, you can not expect to remove the mixed infection; in other words, you can not expect to cure by specific medication and at the same time remove thereby the results as well. About ten years ago I conducted a small institution in Ohio, for tubercular conditions. We had no climate, except of the worst, but we obtained from 24 to 34 per cent. of excellent results in the first and second stage. Even in the first stage we got some good results. One of the patients whom I examined in St. Louis stated to me that before the serum treatment was begun he had gained seven pounds. Clinical experience must be preceded by careful experimentation. It is not an indifferent thing to inject the serum of any animal into a human being. As to the cases which are present, it would be useless to examine them now unless we had previously done so ourselves.

DR. DELANCY ROCHESTER—I should like to refer those gentlemen who are reporting recoveries in tuberculosis, to Flint's original observations in regard to tubercular cases, in which sixteen out of forty-four recovered without any treatment whatever. Tuberculosis, according to his clinical investigations—I should say typhus, because it was typhus—was a disease which was of itself limited, and tends to recovery, and that in a number of cases they recovered without any treatment whatever. I would like also to emphasize the fact that in cases well advanced toward cavity formation, and in cases in which there are actual cavities of the lungs, we have not only a plain tubercular disease, but a mixed infection, and that the specific treatment is to a great degree out of place.

DR. HOLTON of Oregon—I remember reading some time ago some experiments that were made in Geneva with treatment by the serum of the ass. It was claimed that this was superior to the serum of the horse, and attention was called to the fact that consumption is rare where ass's milk is used as food. In twenty-five cases which were reported, thirteen were said to have recovered, two had died, and nine were under treatment, not having been treated for a sufficient time to demonstrate the result. I think that we want to take into consideration that there is still some question about how much the bacilli have to do with the trouble. Experiments have shown that the juice of the muscle of an animal infected with tuberculosis, where there was no tubercle shown in the muscle at all, would on injection produce the disease. It has been shown also by Ernst that the milk of cows infected with tuberculosis, where there was no affection of the udder whatever, and where there were no bacilli in the milk, would by injection produce the disease; that is to say, there were tissues in the juice of the muscle, and in the milk, although the tubercle was not present in either of them, that produced the disease. Now, does the bacillus happen to be there, with the other substance as an attendant, or with it as a cause?

DR. PAQUIN—I am rather surprised that Dr. von Ruck has taken occasion to call attention to the fact that the serum was impure. I expressly stated that this serum could not be expected to be microscopically pure, as it had not received the proper treatment. There may have been cocci there. The antitoxin of Behring contains microörganisms and yet it has been used. A few of these do not show that poison will follow from injection. He is right in saying that we must be exceedingly careful in the matter, but the samples which I gave him were not intended to be utilized except with the knowledge which I gave him that they had not been filtered. It seems to have been the object of the speakers to make it appear that I claimed that I have proved the case at once. I have made no such claim. I have made a report, and it is so far true. Out of twenty-two cases we have not had a death. Out of thirty-five cases in the other ward, during the same period, there have been several deaths. As to microscopic work, I beg to say that I have a means by which a man can see spores from tubercle bacilli; it is my belief that it is possible to do so. I have read of the experiments in Geneva, and I have tried the blood of the mule. It seems to be little different from other animals. They are, however, more subject to disease than the horse; more subject to disease which simulates rheumatism in men. Dr. Holton has mentioned the fact that tuberculosis has been inoculated from tissues not containing bacilli. If this is the case, perhaps there were spores in that juice, and *they* were injected!

## PULMONARY HYPERTROPHIC OSTEO-ARTHROPATHY.

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I have chosen this symptom group for description as it is one that has received little attention from American writers. It has been my fortune to find but one case described in the literature of this country. This was written by Dr. Packard[1] and published in the *American Journal of Medical Sciences* for June, 1892. In European literature I find more than forty cases described during the last five years.

The characteristic lesions were first pointed out by Marie[2] in 1890 and received from him their name. His attention was attracted to these cases by the need of differentiating them clearly from acromegalia, which he described first in 1886. He found that many observers confounded these disorders which in some respects resemble one another. Moreover he believed that the bone lesions of pulmonary hypertrophic osteo-arthropathy were always due to the absorption of a chemical irritant produced by a primary disease of the respiratory organs.

The affection may be defined as a chronic multiple osteitis, involving especially the terminal phalanges, which are in consequence greatly deformed and the ends of the bones of the extremities. These bone lesions follow a chronic disease of the respiratory organs.

Almost simultaneously, Bamberger[3] of Vienna, described the same lesions, and assigned to them the same cause. He, however, included among his cases, cases of congenital heart disease, which exhibited the same osseous malformations, although they could not be explained as due to the same cause. Endeavoring to prove the correctness of his surmise, that this form of osteitis was the result of a chemical poison absorbed from the lungs, pleura or bronchial tubes, Bamberger introduced sputa from one of his cases beneath the skin of animals, endeavoring thus to produce the characteristic lesions; but he was unsuccessful. The earliest and most widely accepted explanation of the clubbed fingers of congenital heart disease has been the existence of chronic cyanosis. But need of well oxygenated blood will not explain the cases of Marie's disease for it is not a symptom of it.

The fact must also be remembered that in most cases of congenital heart disease there are coincident chronic lesions of the respiratory organs such as passive hyperemia and bronchitis. Since the original description of this group of symptoms by Marie, other observers have found them associated with other than lung diseases—with congenital heart disease, with syphilis, and possibly with caries of the spine. It is evident, therefore, that the bone lesions can not be due simply, or always, to the absorption of a chemical poison from the lungs or pleura. It is a fact, however, that in very much the largest proportion of cases, they are associated with chronic suppuration in the respiratory organs.

Thorburn,[4] who has described several cases, all primarily of tubercular disease of the lungs, believes the lesions in the bones to be those of an attenuated tuberculosis. This view is not sustained by other observers for in many instances sputa examinations do not demonstrate tuberculosis. Möbius[5] has suggested that this form of osteitis may be due to a primary affection of trophic nerves, for a clubbing of fingers and enlargement of bones in the neighborhood of joints has been known to result from neuritis. He describes one case in which only those fingers whose nerve supply was interfered with, were affected. Orillard[6] has described a case in which there was the deformity of the hands characteristic of this malady, which he thought resulted from caries of the vertebral column, but even in this patient there was a chronic sero-fibrinous pleurisy on the right side. Three characteristic cases have been observed associated with syphilis. No lung or cardiac lesion was found in two,[7, 8] of them; and no cause of the bone affection could be assigned, except the constitutional disease. In the third, which was described by Chretien,[9] gummata were found in the spleen, liver, and various organs of the body, and a cavity of irregular size, containing partly caseous and partly cretaceous matter, was discovered in one lung, as well as numerous small bronchial dilatations, which contained pus. It is therefore doubtful in this instance whether the affection was not due to the coincident lung disease rather than to the constitutional one.

We must conclude, I think, that pulmonary hypertrophic osteo-arthropathy is not a distinct disease as acromegalia is; but a symptom-group, oftenest coincident with chronic lung affections, rarely with diseases of other organs and with syphilis. From the analogous action of some chemical poisons, such as phosphorus and arsenic, and the well-known tendency of certain infections to involve bones and joints in inflammation, it is probable that this chronic osteo-arthropathy is due to a toxemia which finds its source in the respiratory organs when they suffer from certain chronic diseases. It is best, therefore, to retain the appellation which Marie has given to this group of symptoms, remembering, however, that pulmonary hypertrophic osteo-arthropathy does not signify a pathologic entity, but an affection commonly associated with disease of the respiratory organs, although having at times a different origin.

The symptoms can perhaps be best depicted by describing a typical case:

A boy 4½ years old came under my observation a short time ago with the following history: When about 1 year old he had pneumonia. Since that time he has coughed more or less constantly, and has frequently expectorated large quantities of purulent sputa. About one year after the primary pneumonia, his parents noticed that the ends of his fingers and toes became deformed by enlargement and that his wrists and ankles were increased in size to an abnormal degree. He required shoes several sizes larger than children of his age usually wore. His family history threw no light upon the origin of his malady. His parents are poor and in consequence he has not had constant medical aid. He appears as tall as children of his age usually do; fairly plump; his face is well shaped, although his expression is dull; his nose is short and somewhat broad; ear lobes a little thick; cheeks full; lips rather large, especially the right half of the lower one which is slightly pendent. His teeth appear quite normal, and his jaws and tongue are not enlarged. The skin on all portions of his body is smooth, soft and quite natural in appearance. His neck is slender. The thyroid and lymphatic glands about it are not abnormal. His body is well proportioned. There is no spinal curvature, although a dorsal kyphosis has often been observed in this affection as well as scoliosis. Comparative immobility during respiration and enlargement of the left half of the thorax is noticeable. The lower intercostal spaces on that side are not observed because of their distension, although readily seen upon the right side. The apex beat of the heart is invisible. Palpation of the chest reveals only the smoothness and distension of the left side. On percussion the whole of the left side is found to be absolutely dull, both in front and behind, and from the clavicle to the bottom of the thorax. On the right side, resonance is quite normal, except that between the third and sixth ribs, and extending about an inch to the right of the sternum there is an area dullness, due evidently to displacement of the heart to the right side. The respiratory sounds over the right lung are strong and exaggerated; over the left lung they are entirely wanting, except just beneath the clavicle and in the upper half of the left inter-scapular region, where there is consonant bronchial respiration.

It is evident that an effusion completely fills this boy's left pleural cavity and compresses the lung against the posterior and upper wall of his chest. As he has been expectorating from time to time, large quantities of purulent sputa, it is probable that the effusion is purulent and has been partly drained through the bronchial tubes. The effusion has existed at least a year, for as long ago as that, his parents were told that his left lung was useless. There is no disturbance of appetite, digestion or interference with the functions of other viscera. His parents say that at times he is feverish, especially just before and when expectorating large quantities of purulent sputa. His pulse is quite normal as regards fullness, force and rapidity, and when seen by me there was no increase of bodily temperature. The bones of the body are not deformed. Nor are those of the upper arms enlarged. But both wrists are considerably thickened and broadened. There is no interference with the motions of these joints. The metacarpal bones are not affected, but the first phalanges of the fingers are abnormally large, especially near the first finger joint. The second row are little or not at all affected, but the terminal phalanges are enormously and most characteristically enlarged. They are greatly broadened, and at the same time greatly thickened. The nails are abnormally arched, both laterally and longitudinally, so that they curve over the finger ends like parrot beaks. The last phalanx of the thumbs measures 6 c.m. in circumference and of the middle finger 5 c.m. The enlargement of the wrists and of the fingers is so great that it creates the impression of a general increase in size of the hands, although a genuine increase is not observable in the carpo-metacarpal regions. Precisely the same changes are visible in the feet. The ends of the toes, especially the big toes, are clubbed and greatly enlarged. The ankles are considerably thickened, as are the bones about the knees. The joints of the knees are not distended with fluid but the lower ends of the femurs are much enlarged. The hands and feet are mobile but the knees are slightly stiffened. There is no tenderness about the joints and never has been much.

The parents of this boy say that he has rarely complained of pain, although there are times when he seems inclined to play less than usual. In some other cases pain has been a prominent symptom. It has, however, rarely confined a patient to bed, although it has often restricted the use of the extremities. Pain is most apt to occur at the onset of the bone affection and is rheumatoid in character. Although in a small proportion of cases the onset of these lesions

is painful and somewhat abrupt, as a rule it is insidious. A striking and characteristic feature of this malady is the symmetrical distribution of the changes in bones and joints.

As yet it has not been possible to obtain samples of the sputa or urine of this patient for examination. When urinalyses have been made in similar cases no marked abnormality has been found. Legrain,[10] who investigated with unusual care the chemical composition of the urine of one patient in whom these lesions developed in infancy, and persisted up to the time of the examination, when he was 25 years old, found the quantity voided daily to be normal or only slightly increased. Its specific gravity was normal; and it contained between 14 and 15 grams of urea per liter; about 13 grams of chlorids and 1.6 of phosphoric acid. The proportion of earthy phosphates to alkalin phosphates was as 4 to 5. He found .07 of a gram of magnesia per liter of urine and .216 of lime. This is twice as much lime as normal, in proportion to the amount of magnesia. Legrain discovered that when acids were administered to this patient the amount of lime was increased still more. He was led to investigate particularly the proportion of lime and magnesia voided, by some observations of Chabrie which he quotes; the latter found that the affected bones in this disease contained comparatively a small amount of lime salts and proportionately a large amount of magnesium.

Post-mortem examinations of the bones have been made by Bamberger,[3] Therese and Rauzier.[11] They find in varying combinations an increase of synovia, enlargement of the epiphyses, erosion of the cartilages in some of the joints and enlargement of the long bones just above the joints, and sometimes along almost their entire length; thickening and adhesion of the periosteum in places, and the formation of wart-like growths of new bone within the periosteum; occasionally also they have observed central rarefying osteomyelitis.

These lesions may develop at any period of life, from infancy to old age; although oftenest in the earlier years of adult life. They occur most frequently in males.

Of affections of the respiratory organs with which this osteo-arthropathy seems to be associated, tuberculosis, empyema, and bronchiectasis are the most common. Cancer and sarcoma of the lungs with complicating bronchitis and pleurisy are among the rare concomitant affections.

A diagnosis of pulmonary hypertrophic osteo-arthropathy is usually not difficult. The peculiar and characteristic clubbing of the fingers resembles no other affection, except the common hippocratic finger or drumstick finger, from which it can be distinguished by the involvement of joints and other bones than the terminal phalanges. The close resemblance of these affections and their association with similar diseases makes it probable that the former is an exaggeration of the latter. The shape of the terminal phalanges, the location of the enlargement of the other bones, their shape, the non-involvement of the cranial bones make it easy to distinguish this affection from chronic rheumatic arthritis, liontiasis ossea, gigantism, and the commoner tubercular or syphilitic joint lesions. It is easier to confound it with acromegalia, although such confusion will not happen if close attention is paid to the characteristic symptoms of the latter disease. In acromegalia the terminal phalanges and finger nails are not disproportionately enlarged and deformed; the fingers, as a whole, are uniformly and proportionately enlarged. The same is true of the toes. The metacarpal region of the hand, and the metatarsal region of the foot is much increased in size, especially in proportion to the wrist. Kyphosis is usual, but it is generally cervico-dorsal, not dorso-lumbar, as in this affection. In acromegalia the inferior maxilla is greatly enlarged, and so protruded that the teeth of the two jaws often can not be approximated perfectly. The nose, ear lobes, lips and tongue, are very much increased in size. These deformities may interfere with speech, mastication and deglutition. Acromegalia is also not associated with any disease of the lungs but with an enlargement of the pituitary body and consequently commonly with disorders of vision.

Improvement in the bone lesions has very rarely been observed. Moussous[12] saw one case due to empyema, in which drainage and thorough cleansing of the pleural cavity was followed by a diminution of the deformity of the fingers and toes. Gillet[13] noticed similar improvement in another case, follow drainage of a tubercular cavity. One[7] of the cases of supposed syphilitic origin also recovered after a course of specific treatment. Another case has been reported by A. Desmons[14] and W. Binaud, which they treated by subcutaneous injections of tissue extract, made from the lungs of healthy sheep. These injections were made for several months, without injury or noticeable discomfort to the patient. The deformity no longer increased. The patient improved in general health. And what was more noteworthy a thoracic synous which had persisted for years and grew out of an empyema that caused the osteo-arthropathy closed perfectly. At the same time, ease in the flexion of the digits and muscular power in the hand increased. Motion in the joints of the feet and legs, became so much freer that the patient could walk without a cane, upon which he had long been dependent. A single trial of so novel a treatment is suggestive but not demonstrative of its utility.

The result of treatment in the case which I have described can not be related, for the child has come only recently under my observation, and as yet it has been impossible to execute the surgical treatment which is required. Aspiration, and if the effusion proves to be purulent, as it seems probable that it will, thorough drainage of the pleural cavity is indicated. By this procedure we may hope at least to stop the bone disease in its progress and possibly even effect a disappearance of it.

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[38] Gerhardt Berliner Klinische Wochenschrift, Dec. 15, 1890.

DISCUSSION.

DR. S. SOLIS-COHEN of Philadelphia—It has been my fortune to meet with two cases of the affection so well described in the paper, and to find in one of the cases a little more difficulty in discriminating the case from acromegalia than either my reading or the paper just laid before us this afternoon would seem to indicate. The point, however, upon which from further reading and from a study of these cases I would be inclined to lay greater stress, is the broadness of the hand in acromegalia, as contrasted with the length of the terminal phalanges in hypertrophic osteo-arthropathy. In both instances under my notice there was associated chronic pulmonary tuberculosis in aged subjects. It is quite common, however, to meet with kyphosis, and with the hippocratic finger-nail in these subjects, especially in the debilitated and poverty-stricken people whom we meet at the Philadelphia Hospital, and I have thought that the affection discriminated by Marié and described this afternoon by Dr. Davis, is after all, as I think is Dr. Davis's opinion, merely an expression of a commonly encountered condition. If we were to class as pulmonary hypertrophic disease of the joints every case of empyema, or other suppurative thoracic affection which is associated with thickened terminal phalanges, with curved parrot-beak finger-nail, and so on, I think I could show two or three dozen cases at a moment's notice. Therefore, I would lay stress upon the involvement of the wrist and ankle joints before consenting to the diagnosis of this condition, which is again a further point of discrimination from acromegalia, in which the wrists and ankles as a rule are not affected. The condition is one of extreme interest, forming as it does one of the great group of affections to which clinical attention has so lately been directed, namely, the trophic results of chronic toxemias. I use these large expressions, which are somewhat vague, for the reason that I have not yet determined, or I think are we in a position to ascertain just what the toxemia is, and just what the exact pathologic and etiologic relation of the affection is. Still, it is trophic, in so far as it is a disturbance of of normal secretion, leading to excessive development of certain structures at the expense of others. In these cases there is excessive development of the bony tissues, in rheumatoid arthritis also development of the bony tissues with destruction of others involved in acromegalia, excessive development of subcutaneous tissues in myxedema. Here we have a large group of cases of perverted trophic conditions. That all will be shown to be due to some error in embolism will hardly be doubted. The evidence seems to prove that in this case it is some toxin, developed from the presence of pus within the body, whether that pus be formed in one disease or in another. I have listened with great interest to Dr. Davis's paper, and have learned a great deal from it.

DR. DAVIS—At first I was somewhat in doubt as to whether this case was not one of acromegalia, because of the enlargement of the hands and feet, and because of the dull expression of the patient, broad face instead of oval one, and thickening of the lips. It was perfectly evident on careful examination that there was no enlargement of the jaw, which is so characteristic of acromegalia. There was enlargement of the terminal phalanges and no increase in the size of the palm of the hand, and no thickening of the tissues outside the bones. The diagnosis was thus made clear in this case of pulmonary hypertrophic osteo-arthropathy. Upon these features we have to depend in making our diagnosis.

## MEASURES CALCULATED TO MODIFY ACUTE INFLAMMATIONS OF THE RESPIRATORY TRACT.

Read in the Section on Practice of Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY H. B. SEARS, M.D.
BEAVER DAM, WIS.

No single remedy or measure can always be relied upon to afford relief in any acute disorder, as the disease itself is often but a climax in a pathologic process, the divergent lines from which, radiate to a series of inherited or acquired causes; the most important of which must receive consideration of him who would stay the process of disease or assist nature in restoring to health.

Undoubtedly there are many measures utilized in therapeutics, identical in effect; also more than one way by which a pathologic process may be turned to a healthful issue.

We find ourselves to-day confronted with quite a number of methods for treating acute respiratory troubles; each of which, undoubtedly, possesses merits peculiar to itself and well adapted to meet certain indications which arise in these affections; but that any one remedy or means can fulfill all the indications or be applicable in every case could not be claimed, much less substantiated. One becomes expert in the use of a remedy or measure the same as in a certain surgical procedure; and one may also become blinded to the defects of a remedy or measure because of over-confidence in the same. We can only become right eventually by comparison of thoughts and experiences.

One urges us to use cold water locally or generally, one pilocarpin, another digitalis, others strychnia; another values hypodermoclysis; still others urge the expectant plan of treatment, combating a symptom here and there as it appears too prominent, asserting there is no way to shorten the inflammatory process and that the physician's duty is to watch, but act *only* when positive indications arise.

The writer desires to call your attention in a general way to conditions found in asthenic cases, prostrated with acute respiratory inflammations. Infancy and old age claim the larger share, but all ages furnish us with examples. Reference is made to the whole respiratory tract, because all parts suffer more or less in common, and treatment for one part is not wholly inapplicable to the rest of the tract; weakness or vigor having their respective influence upon the whole tract much the same. The intention is to look at the subject from a normal anatomic and physiologic standpoint, noting the variations in local nutrition and elimination and instituting treatment, in part influenced by the conditions existing just previous to the onset of the acute inflammation, and taking into consideration microörganisms or their chemic products only so far as defective nutrition in a part offers to them a suitable feeding and propagating ground.

All but a small percentage of the deaths in acute respiratory inflammations result either from excessive secretion of mucus or heart failure. These facts led the writer to look for prompt means of checking secretion in the respiratory tract, also those calculated to bring about the best possible heart action; appreciating the fact that not only healthy tissue metamorphosis but also the excessive changes occur-

ring during the inflammatory process are much influenced by the condition of the heart and capillary circulation. Every practitioner of experience has, probably, been impressed with the tenacity with which bronchial catarrh clings and the slowness with which resolution takes place in the lungs of subjects having a sluggish circulation. We have of these two main classes: first, the spare or poorly nourished in whom vitality is generally low and with whom the matter of nutrition is the subject of all importance, everything else being secondary thereto; second, a class not feeble in appearance, for they look full blooded and well nourished, but when your finger touches the pulse you perceive it is small and rapid. They are short of breath and a degree of cyanosis is present in the extreme cases. You may discover a heart murmur and you may not. Râles may be heard here and there over the lungs; quite frequently even when they feel their best. They have great thirst and demand large quantities of cold water, or something else, to quiet the inward burning. We will not go into further detail or speculate as to the different lesions which may have brought about an approximate of this condition. They are not confined to any age or condition in life. The defect in the power of the heart (from whatever cause) has brought about varying degrees of blood stasis, so that the venous system and lymph channels can not unload themselves nor remove the transudation which has occurred into the tissues of the lung. Elimination is much interfered with as well as nutrition. In these cases pilocarpin would be dangerous and heart stimulants alone would, ordinarily, fail to accomplish the desired results. The too common advice to give your fever patients an abundance of cold water (in these cases above all others) would, in the writer's opinion, but make their death more sure.

This condition, against which we are striving, is begotten of a feeble heart and an over-abundance of fluids, which, on account of the lack of tone in the circulation fails to be thrown off by way of the kidneys. Heart stimulants alone might relieve the edema of the tissues by unloading the distended veins and lymph channels, provided the condition of the heart would allow that degree of forcing, but there would be great danger of exhausting or injuring it before the work was accomplished. What seems to be needed first in these cases is depletion, not with the lance (although that might be a successful measure), but by catharsis, vigorous in proportion to the degree of stasis and depletion needed. Then the heart stimulants or tonics will work like a charm, diuresis will be induced and the dilated veins and lymph channels can easily be brought to an approximately normal condition, relieving the tissues of surplus serum and waste products. Then the exhibition of remedies lessening secretion in the respiratory tract, together with those having a tonic effect upon the vascular and nervous systems will, as general measures, do much to avert the dangers which await adynamic cases prostrated with bronchial and pulmonic inflammations.

If this is done we feel that the advice favoring the use of emetics in children and the lance in adults when dyspnea and cyanosis supervene, will not often be needed. By emesis we temporarily relieve the collection of mucus, but excite renewed secretion, very likely necessitating a repetition of the dose, each time increasing the fatal tendency. By bleeding, some of the resistance to the weakened heart is removed, together with waste products, also valuable corpuscular elements of the blood, which will be sorely needed in convalescence should that stage be reached. All of this could be more safely and as surely accomplished by derivation by way of the bowels and kidneys, and the exhibition of heart stimulants and tonics, without the loss of valuable tissue elements.

The condition of the heart and capillaries should determine the use of heart stimulants as well as the efficiency of elimination; also the amount of fluids which the case will bear. When heart tonics are most indicated abundant fluids, most certainly, are not.

Ingestion of fluids does not of necessity increase tissue change or elimination. With a vigorous circulation the ingestion of water may flush emunctories, assisting greatly the throwing off of waste products; but if the circulation be weak, the accumulation of fluids in the body tends still more to embarrass the already failing heart.

Julius Glax made special observation in fifty-three cases of fever, endeavoring to determine if the human body retained water in the tissues during fever or is deficient in water. The amount of water ingested was noted, also the amount of urine passed (cases in which diarrhea was too free were excluded). He concludes that there is a conservation of water during fever, with an increased elimination in convalescence. His explanation is, that at the onset of the fever while the blood pressure is yet high, the diuresis occurs, but a diminution ensues as the pressure becomes lower and a still later increase as strength returns. An increase in the ingestion of fluids increases the elimination in most cases *only* after defervescence has begun, while during the height of the fever, diuresis appears to be more favorable the more limited the ingestion.

The writer would offer, as applicable in many cases of acute respiratory inflammation, the prompt exhibition of belladonna and turpentine for the purpose of abridging or modifying the local process. They have seemed to prevent excessive secretion of mucus in bronchitis as well as lessen the amount of exudation in lung inflammations; and, in conjunction with an effort to maintain the best possible circulation of the blood, have yielded results which encourage the writer to bring the subject to your notice.

In the early stage of respiratory inflammations, before excessive secretion begins, they seem to soothe the mucous surfaces and prevent much trouble. If secretion is already considerable, derivation by way of the bowels, together with the toning up of the heart will enable them to check the secretion of mucus, prevent accumulation in the dependent portions of the lung, or extension of the inflammation by contiguity. In children and feeble subjects this is a matter of no little importance.

Digitalis, as a type of heart stimulants occupies a very important place among the remedies utilized in combating respiratory inflammations, but it should not be forgotten that observation indicates that with high temperature or edema it is not absorbed, or, at least, is ineffectual until the temperature is reduced or the edema somewhat relieved by purgation. An additional advantage of the above mentioned plan of treatment, is that anodynes and antipyretics may be given with greater safety when indicated.

## PRE-COLUMBIAN LEPROSY.

BY ALBERT S. ASHMEAD, M.D.
LATE FOREIGN MEDICAL DIRECTOR, TOKIO HOSPITAL, JAPAN.
NEW YORK.

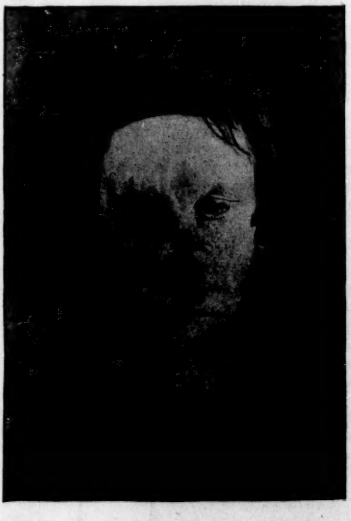
(*Concluded from page 807.*)

I print here, side by side, photographs of loss of nose deformation by lupus, by syphilis, by leprosy. The leper apparently has lost his upper lip, with his nose. This last is taken from Leloir's well-known work. I also print the characteristic deformations of fingers and toes of lepers, according to photographs sent me by Dr. Morrow. I print also photographs of *huacos* pottery, representing deformations. Also a photograph showing leprous tuberculation of the face. This mutilation of the fingers, and this tuberculation of the face, are the most striking features of the disease. Is it not probable, therefore, that if those ancient Peruvians had intended to represent leprosy in the *huacos* pottery they would have shown a tuberculated face or a deformed hand?

Destructive lesion of nose and upper lip, typical of syphilis. Pl. 122. Clinique de la Maladie Syphilitique. Par M. N. Devergie. Paris, 1826. Ulcers roug. du nez. des levres des palais et de l'arrière bouche avec carie des os.

There lives in France (Béarn), in the Pyreneean regions, a class of people called Cagots, who have deformations of the finger- and toe-tips, elevated and arched nails, fissures and cracks, sometimes ulcers of the epidermis and ungual matrix, a reduction of hair, more rarely certain deformations of the phalanges, and some anesthetic cutaneous patches. M. Magitot and M. Zambaco have studied these deformations and consider them as being of a leprous nature, being supported in this theory by historical documents, local traditions and other proofs, etymological and philological. These people represent an instance of survival in extreme attenuation of the genuine leper, so widely spread in southwest France from the thirteenth to the sixteenth century.

In the Academy of Medicine, of Paris, 1893, in a discussion on leprosy, and on the question, "Are there in countries reported non-leprous, as France and especially in its northern regions, also in Paris, vestiges of ancient lepra?" M. Leloir mentions a case of multiple cutaneous gangrenous plaques connected with a lesion of the nervous system, which might have been lazarine lepra. He also, in his report, refers to what he said previously on leprosy in Norway, and quotes three cases, in which the diagnostic of lazarine leprosy was imposed: "In these three cases," says he, "we are in the presence of French patients, born in France, of French parents, and who had never left their own country (Paris and the Department of the North). Certainly if these patients had lived in leper countries one would have found the diagnostic of the mutilating lepra, the lazarine lepra. As it is, these affections, are simply called problems. *Are not these degenerated leprosies vestiges of the lepra of old?*"



Lépre tuberculeuse devenue tropho neurotique, lepre mixte variété; tuberculeuse systematisee nerveuse. Lépre Norvegienne. Traite de la lepre, par Leloir. Paris, 1886. Pl. xi.

Leloir, at Lille, in two clinics, showed four cases of unnamed affections, simulating systematized nervous lepra, or mixed lepra. The first of these accidents was that of a man born in the vicinity of Cambrai, who had never left the region of the north, and presented all the symptoms of systematized nervous lepra.

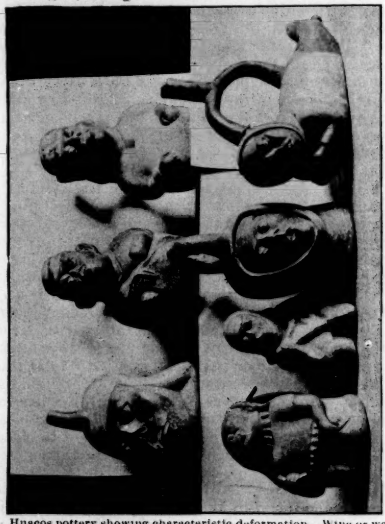
The second was a thresher, 46 years old, pensionnaire at the General Hospital, born in the vicinity of Bergnes; he had never been a soldier and had never left French Flanders. This patient presented in the highest degree the characters of the systematized nervous lepra. M. Leloir made the histologic examination of the pus taken from the cutaneous ulcerations, and from a small fragment of skin bordering on an ulceration; he found nothing characteristic. He

found two bacilli, showing the histo-chemic reactions of the leprous bacilli, and tolerably well their characters; "but you know," says he, "how abundant the lepra bacilli generally are in leprous tissues."

The third observation concerns a shepherd, 66 years of age, born near Fauguembergnes (Pas-de-Calais), who had never left Artois and the Flanders.

The fourth observation was the case of a woman aged 58, who had never been outside of French Flanders. This was a quite remarkable case of systematized nervous lepra. At the autopsy, pronounced alterations of the nerves of the limbs were found.

Leloir mentions another case, in 1892, a patient of his service, born near Dunkerque, and who had never been outside his native country; he was affected with trophic troubles, muscular and cutaneous, resembling much, in certain respects, those caused by the systematized nervous lepra, but probably of syringomyelitic origin; this gave occasion to M. Leloir to agitate



Huacos pottery showing characteristic deformation. Wine or water bottles exhumed with pre-Columbian Peruvian mummies, (Chaucan and Champeco). Bandelier collection, American Museum of Natural History.

again, in a clinical lesson, the question as to the persistence of the vestiges of ancient lepra in France.

"Taking ground on the phenomena observed in those subjects," says M. Leloir, "I remarked in 1885, in my clinics at the Hospital Saint Sauveur, that in these five observations we have to deal with subjects affected with lesions which resemble much those of systematized nervous lepra, deforming or mutilating; those of the systematized nervous lepra at the period of the achromic and hyperchromic specks; of the lepra called lazarine (systematized nervous lepra with leprous erythema, pemphigoid and escharotic) and finally, of mixed lepra."

Were these cases of true leprosy, as one would certainly be inclined to believe at first glance? But, if so, where was the lepra contracted? This objection, Leloir says, might, however, be discarded, if we supposed ourselves in the presence of autochthonous lepra, of vestiges of the ancient lepra which covered Europe, and France especially, up to the middle of the fifteenth century. He emphasized once more the fact that quite possibly a disease, which at the death of Louis VIII. (1229), had necessitated the creation of 2,000 leproseries in France, and of 19,000 throughout Christendom, had not entirely disappeared from the countries where it was believed to have been extinct for centuries.

He adds, however, that such a theory could not pass from the domain of hypothesis, to the domain really scientific, unless the ken of future observers can be connected in an incontrovertible fashion with lepra, on the basis of a careful clinical, anatomo-pathologic and bacteriologic study.

Now in the five observations which furnished a basis for his communications, and his lessons, if the patients had much in common with real lepers, it must nevertheless be confessed that certain clinical details, (for instance, the absence of paralysis of the orbicularis of the eyelids, with anesthesia of the face, etc.) did not tally exactly with the lepra diagnostic, and that there was no bacteriologic criterium at all.

"It might, however," says Leloir, "be conceived possible that these cases of autochthonous lepra, vestiges of the ancient lepra, presented themselves to-day under an aspect slightly modified, the disease having, as it were, degenerated since the Middle Ages."

M. Leloir thanks M. Zambaco-Pacha, for giving fresh support to the hypothesis expressed by the Lille professor, in 1884, 1885 and 1886, by his works on the Cagots of Bretagne. Only, he thinks that M. Zambaco's labors do not give us the decisive, conclusive proof of the persistence of ancient lepra in the individuals described by him. "Until he finds in them, Hansen's bacillus, one must be allowed to doubt, in fact, one must doubt.

"I content myself with referring to the Chapter 'Diagnostic,' of my Treatise on Lepra, where it will be seen how difficult the diagnosis of this disease is sometimes. If what I say in that chapter, and what I said in 1889 in the *Annals of Dermatology*, in speaking of a patient of my service whose observation was published by my interne, M. Baade, and subsequently published again by M. Thibierge in the Medical Society of the Hospitals, is true, if lepra can be present unperceived before the most experienced doctors, if they are not perfect leprologists, it is not less reciprocally true that we must be extremely cautious, lest we confound several quite different diseases with lepra. This is especially to apply to the systematized nervous lepra, a real specific polyneuritis, which may be easily confounded with a number of affections of a tropho-neurotic origin.

"As I said in my Treatise on Lepra, it can easily be conceived that as systematized nervous lepra is nothing but a specific polyneuritis, many affections of nervous origin are confused with it. But even this specific character of the leprous neuritis is cause that in its character, in its evolution, in its dissemination, in its localization in certain nerves, etc., it presents characters so different from those we are used to observe, such a special stamp, that in general the diagnostic will be easy enough for a physician who knows something about systematized nervous lepra.

"I will conclude in a few words:

1. "As I have shown with regard to the region of the North and for Paris in 1884–85, and as has been

shown in 1892 by M. Zambaco-Pacha for Bretagne, there are in France persons affected with nameless diseases, bearing a strong resemblance to lepra.

2. "As I asserted in 1884–85, and as has been affirmed in print by M. Zambaco-Pacha in 1892, it is possible that we are in these cases confronted with vestiges more or less degenerated of the ancient lepra, which had invaded all France and Europe in the Middle Ages.

3. "This theory is plausible, suggestive, but it is still in want of a scientific demonstration founded on a set of facts carefully observed and carefully described from an anatomo-pathologic and bacteriologic point of view."

Thus we see that, if we had cases with such deformations as may have existed in Peru, and which the *huacos* pottery is claimed to represent, not even that would be sufficient proof of the existence of leprosy, as long as mutilation of hands and feet, and tuberculation of face, were absent. Evidence of trophoneuritic destruction is not sufficient to make us assume leprosy. Nor would even syringomyelia, if it is existent in British Columbia, be proof of the existence of leprosy in pre-Columbian times.

There is a little pamphlet, published in London, 1889, by a member of the American Ethnological Society; it is entitled "Tepeu: the Hypothetical Migrations of Morbus Americanus." Tepeu is the Quiché name for syphilis, meaning also nobility. The author claims that the investigations among the Natchez, and the mound-builders of the Cumberland Valley, established one point: that the latter were the subjects of a constitutional malady, which produced certain textural changes in the osseous tissue, a malady which may or may not have been syphilis, but which was incontestably like syphilis in its pathologic lesions and may therefore have been lepra, "the pathologic counterpart of syphilis and by some writers regarded as essentially one with it."

I have myself attempted to show in an article entitled "Leprosy in America before the Advent of the Spaniards and the Negroes," published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, December, 1894, that the disease, leprosy, did not exist among the ancient Aztecs. The Natchez are supposed to be a connecting link between the mound-builders of the Mississippi Valley, and the ancient Aztecs. If the Natchez had been lepers, the Aztecs would have been lepers. Now, as I said in that article, and as Dr. Brinton stated before, the word *lepra*, to the ancient Spaniards, and the word *teococoliztli* to the ancient Aztecs, meant the same disease, which undoubtedly was syphilis. From which we may certainly draw the conclusion that the pathologic lesions in the remains found in the Cumberland Valley are more likely to be attributable to syphilis than to leprosy.

Mr. Henry C. Mercer, Curator of the Section of American and Prehistoric Archæology, University of Pennsylvania, who has just returned from an exploration in Yucatan, says that he could not discover any proof of the assumed great antiquity of the Mayas, or of their migrations; he is inclined to hold quite opposite views. "The interment vase," says he, "must be proved to be pre-Columbian, if it is to be of any use in the argument, and this is not an easy matter. I am not altogether," says he, "satisfied with the syphilitic bones from Tennessee, but am open to proof. I know how collectors 'collect,' and should want to be sure that Bandelier had dug up the Peruvian vases himself, and studied the whole interment. I found some crania on the eastern shore of Maryland not long ago, in an ossuary, which Dr. Harte, of the University, after examination says are syphilitic, but the ossuary may not be pre-Columbian. The description of these is already in MS. I know the need of exact archæologic work in Central and South America, where the first object has been to discover startling facts and 'beautiful specimens,' and trust you will be very careful in making use of what has been sent up to us by enthusiastic collectors."

I may say here that these *huacos* potteries which have been sent up by Mr. Bandelier are said, by competent archæologists, to be pre-Columbian. Certainly, one of them, if dug out of a grave twelve feet deep, which contained a Pachacamac pre-Columbian skull, showing a syphilitic lesion, diseased frontal and parietal bones, must have some relation to the same skull; that is, represent the disease apparent in it.* This cranial lesion is certainly due to syphilis. The plates in Devergie's "*Clinique de la Maladie Syphilitique*," Paris, 1826, present caries and necrosis of the frontal bone, of the nostrils and superior maxillaries, following chronic syphilis; exostosis and caries of the frontal bone and of the cheek bone, and its surrounding parts; caries of the frontal bone, nasal bones and ethmoidal bones, developed under mercurial influence, and a process of healing; exfoliation of internal table of the frontal bone, followed by caries and necrosis of that bone. These lesions are peculiarly syphilitic. In the same atlas will be found plates showing destruction of the nose and upper lip, strikingly like the deformations on *huacos* pots; scars of carcinomatous and rodent ulcers (syphilitic) occupying the left wing of the nose, almost totally the upper lip and left cheek, with caries of the cartilages of the septum, and the wing of the nose; rodent ulcers of the nose, lip, palate and of the throat with caries of the bone; irregular cicatrices of ulcers of the head; tuberculous and ulcerous cicatrices, with total loss of nose; tuberculous ulcer, loss of nose through the progress of ulceration caused by syphilis, consecutively developed after treatment by mercury; cicatrices of ulcer of the head, and others of the face, thought to be syphilitic, with caries of the upper jaw and the nose.

These lesions are identical in appearance with the lesions to be found in the *huacos* pottery. There is but one loss of nose, and apparent loss of part of upper lip, of a leper represented in Leloir's "*Traité de la Lepre*," Paris, 1886. The title of this plate is: "Tuberculous lepra changed into tropho-neurosis, mixed lepra; variety: systematized nervous tubercular leprosy in a Norwegian." This is not like *huacos* pottery, because there is typical leprous cicatrization and contracture of the connecting link of flesh between the lip and the lost nose. It is not a loss of lip. Besides, there is the usual leprous stenosis of the oral aperture, and general facial atrophy. These characteristics do not appear in any of the *huacos* specimens. Moreover, in the dry or atrophic form of leprosy, the only form which these vases could possibly represent, we should have crooked or mutilated fingers, *and deformity of eyelids* which in these vases never appear.

One thing more: to have the lepræ bacillus from a leprous country, say India or China, it is not only necessary that the bacillus be transported in a human

*NOTE.—I have written to Mr. Bandelier for the exact facts.

body, but that the condition of life of the human body itself should be transported also. This point has been clearly explained by Hansen in his investigations on the conditions of leprosy among the Norwegians emigrating to Wisconsin and Minnesota. He found that while a number of lepers (of course not known as such) had emigrated, in no case did he find a second generation leper, or that a case of leprosy had developed here from Norway not imported. He asserts that the reason of it is that their habits change, that their conditions of life are not the same as those in Norway, and that therefore the conditions necessary for the life and well-being of the bacillus are absent.

Deformation of fingers and toes, from Dr. Morrow's collection of photographs.

CONCLUSIONS.

So far as I have investigated this subject, I consider myself justified in saying: 1, syphilis and tuberculosis are pre-Columbian; 2, that any deformation on American pottery would be more likely to represent lupus and syphilis than leprosy; 3, the pottery upon which the supposed leprous deformations appear, is beyond doubt pre-Columbian.

NOTE.—I may say here that I have examined many bones, in a disintegrated condition to be sure, dug up at Llujon, Bolivia, five miles over the Peruvian line, at a place called Tiahuanaco; also two skulls, at the same place, which probably are not so old as the disintegrated bones. These latter two skulls have the peculiarity of an open suture running down from the coronal suture of the forehead to the root of the nose. These skulls are, like the bones I mentioned, not only pre-Columbian, but pre-Inca. In none of these is there any evidence of leprosy or even of syphilis. What makes us look with some suspicion of leprosy at these Tiahuanaco bones in Bolivia is the probable relationship between the Micmacs of Nova Scotia and the Tiahuanaco races of Bolivia. The Micmacs are supposed to have come north from the southwest, and to have had relations with the Navajo and Apache Indians, and also with Peru, Yucatan and Mexico. Whether the endemic leprosy of Nova Scotia, supposed to have come with the Bretons, is at all connected with the Micmacs remains to be seen.

# SOCIETY PROCEEDINGS.

## ILLINOIS STATE MEDICAL SOCIETY.

*Abstract of the Proceedings of the Forty-fifth Annual Meeting, held at Springfield, May 21, 22, 23, 1895.*

FIRST DAY—MORNING SESSION.

The Society met in Central Music Hall, and was called to order by the President, DR. DANIEL R. BROWER, of Chicago, at 9:40 A.M.

Prayer was offered by the REV. F. W. TAYLOR, of Springfield.

The report of the Executive Committee was made by the President.

After the transaction of some routine business, the general session adjourned, and Section 1 was called to order.

SECTION I.

*Practice of Medicine, Medical Specialties and Therapeutics.*

*Chairman*, DR. E. P. COOK, of Mendota.

*Secretary*, DR. J. T. MCANALLY, of Carbondale.

The Chairman made a few remarks introductory to the work of the Section, after which he called for the reading of the first paper, entitled

LITHEMIA,

by DR. C. W. HALL, of Kewanee. The author said there were three reasons for selecting this subject: 1, because its importance is not appreciated; 2, because it occurs much more frequently than is generally supposed; 3, because it is a condition medicine will remedy. Cases of lithemia generally present themselves with a history of long-standing ill health. Medicine seems to help for a little while. They complain mostly of indigestion. The health of these patients has been failing for a long time. They have no appetite, and when they do eat they wish they had not, for a heavy, loaded sensation follows eating which in time causes great distension of the bowels due to gaseous fermentation. Food is oftentimes vomited and it is very sour. Bowels are constipated. General weakness is present. Patients have no desire for mental work; they feel blue and despondent, and this latter condition varies with the amount of gaseous distension. Pain is generally present in the region of the liver or stomach and in the region of the kidneys. An empty faint feeling in the stomach before eating accompanied with dizziness and headache. The author emphasized the pain felt in the region of the kidneys. This pain takes a course down the ureters, the ureters being rather tender to the touch. The pain also extends to the meatus urinarius, and the urine smarts and burns. The urine is always highly colored and when cool very cloudy. We have a brownish smoky color of the urine, and sometimes a reddish deposit. Litmus paper gives a decided acid reaction. The cause of this is an improper oxidation of albuminous

substance taken as food. The gastric secretion in lithemia is especially affected and gastro-duodenal catarrh is probably the most pronounced symptom of the disease. In the treatment the author never fails to give almost perfect relief by the administration of nitric acid C. P. and phosphate of soda C. P. Nitric acid is given before meals in one or two drop doses in plenty of water; this lessens the acid secretion of the stomach. It is a great oxidizing agent, stirs up the torpid liver and is probably the best all round medicine to give in this disease. The sodium phosphate is given in the middle of the morning, afternoon and at bedtime, which acts very favorably on the catarrhal condition of the stomach and bowels. It neutralizes the acidity and dissolves the mucus. For gaseous fermentation the author gives creasote and assafetida with good results.

DR. E. INGALS, of Chicago, contributed a paper on

SOME OBSERVATIONS ON MODERN THERAPEUTICS

which was read by the Secretary of the Section in the absence of the author. The paper stated some facts that indicate the very weighty obligations under which we rest for some modern discoveries in therapeutics. Therapeutics was defined as that branch of the science of medicine which treats of the properties, powers, action and modes of application of such agents as will prevent, ameliorate or cure disease. To learn that there was such a disease as cowpox, that it caused but little discomfort to the patient and left behind no harmful sequelæ, and that it rendered the system immune to smallpox, was, he thinks, the most important discovery ever made by man. It has added millions to the number of inhabitants on earth; it has given them exemption from suffering and has greatly augmented their wealth. Therapeutics requires very careful study, for there is no department that is more difficult to master. With most medicines it is impossible to determine by any scientific rules how they produce their effects. We know how some antidotes and antacids are curative, for their action is chemical, but in general we acquire this knowledge through empirical observation. We would never suspect from any examination of the medicine that morphia would compel sleep or allay pain, strychnia cause convulsions and death, that ipecac would produce emesis, or veratrum slow the action of the heart, except by administering them and observing their effects; and these effects are not uniform, for they will differ as they are influenced by individual idiosyncrasies, or by the varying substances they meet in the stomach or in the circulating fluids, and sometimes by vital forces that we do not understand. For these reasons therapeutic skill is only to be acquired through the most painstaking study and observation, but if these are given it will abundantly reward a student for his labor.

DR. ARTHUR R. EDWARDS, of Chicago, read a paper on

THE DIFFERENTIAL DIAGNOSIS OF UREMIA AND ORGANIC BRAIN LESIONS, ESPECIALLY MENINGITIS, WITH REPORT OF OBSCURE CASES.

Uremia is usually readily differentiated from organic cerebral disease, yet confusion may arise in atypical cases. The main rule in diagnosis is to assume that uremic intoxication is the cause for nervous symptoms in nephritic subjects only when other causes can be excluded. Preëminent importance attaches to the presence of albumin, casts and to the amount of urine, although 1, nephritis may be unattended by albuminuria; 2, casts may be permanently absent; and 3, uremia may intervene when the amount of urine and urea is normal. (Citation of case of chronic parenchymatous nephritis in which casts without albumin were present.) If uremia is due to cerebral anemia, we must guard against confusion with cerebral anemia from other causes, but such albuminuria is transitory and unaccompanied by casts. Conspicuous cardio-vascular symptoms are valuable diagnostic adjuvants and yet not worthy of absolute confidence. (Citation of case of albuminuria and cardiac hypertrophy in which the clinical diagnosis was uremia while the autopsy disclosed meningitis and arterio-sclerosis.) Numerous alterations in the pulse may involve differentiation. The retinal findings are most important, for retinitis albuminurica is rarely absent in chronic nephritis leading to uremia. In certain cases the diagnosis is more difficult than that of any other cerebral disease. Uremia and meningitis have many symptoms in common—headache, convulsions, coma, dyspnea, vertigo, etc. Confusion is almost inevitable when partial contractures, focal paralysis, and temperature occur. In such cases the most experienced diagnostician errs. Broadly speaking, circumscript convulsions and paralyses speak strongly for anatomic changes in the central nervous system, although they may rarely occur in uremia. This point is scarcely recognized in the literature and the author of the paper collected published instances and reports four cases of his own, in which the most diverse focal symptoms appeared in uremia—crossed paralysis, ptosis, strabismus, temperature, delirium, hemiplegia, etc. The multiplicity and incongruity of the symptoms were best reconciled by a diagnosis of meningitis. In all the instances there were no microscopic changes in the brain, edema cerebri alone being present. Unusual focal signs may exceptionally occur in uremia. Convulsions may occur in one-half the body, opposite half of tongue and arm. Trismus, nystagmus and grinding of the teeth have been recorded. Rigidity of the neck, so common in meningitis, has occurred in uremia with consequent confusion in diagnosis. Opisthotonos, extreme in degree, complicated a plain case of uremia. Paralyses are rare and usually transitory. The combinations are manifold. Hemiplegia is the most common form, but exceptional combinations are found, *e. g.*, 1, crossed facial paralysis with hemiplegia; 2, crossed oculomotor paralysis and hemiplegia; 3, paraplegia; 4, hemiplegia with aphasia, amnesia and deafness; 5, hemiplegia plus nystagmus, diplopia and aphasia; 6, paralysis with conjugate deviation or glossoplegia; 7, tonic local spasticity with focal paralyses. In short, the writer has been able to find instances in uremia of almost every focal symptom or sign observed in disease of the central nervous system, combined in infinite variety and simulating the most diffuse intracranial processes.

TYPHOID FEVER.

A paper was read on this subject by DR. D. W. ALDRICH, of Galesburg. The author believes that the typhoid bacillus is an important factor in the disease; that it may be taken into the system through the mouth, air passages, and possibly the skin; that the spleen, liver, and intestinal tract afford soil in which to incubate and develop a crop of the bacilli which may prove to be master of the situation a few days or weeks later on. Typhoid fever is a disease of many symptoms or of few. Where the bacilli are not in any manner interfered with, the symptoms are many and severe in the extreme. But it is possible to interfere with the development and action of the bacilli in such a manner that their presence in the system is scarcely recognized by the symptoms they produce. It is for the purpose of bringing about this change that the physician is called in the case. Since August 1, 1890, it has been the author's custom, when called to see a patient with typhoid fever, if the stage of incubation is not passed, to apply ice water or ice bags to the abdomen for a period of twelve to twenty-four hours, with a view to interrupting what he presumes to be the incubating process, first using cloths wrung out of tepid water, gradually lowering the temperature until at the end of one hour, ice water or ice bags are used. It has also been the author's custom to administer carbolic acid and iodin with a view to disinfecting the alimentary canal, destroying the germs; to reduce the temperature; also to administer the sulphate of magnesia to wash out typhoid bacilli and other noxious matters which may find lodgment in the alimentary canal. The author then detailed the symptoms of two cases and the method of treatment, and closed by saying that since Aug. 1, 1890, with one exception, he had fed 182 patients of typhoid fever upon milk alone. The exception was a case in which beef tea was administered by the nurse with a view to rendering invaluable assistance to the physician. This patient died, but the other 181 patients recovered. The patients were allowed to take their milk either hot or cold. Other articles of diet were prescribed. Rectal feeding was resorted to in many very weak patients. The same article of diet, however, with the addition of a small amount of brandy, was alone made use of. Later in the disease, in some cases oils were rubbed into the skin at regular intervals and in sufficient quantities to aid very materially in upbuilding the system.

DR. C. C. HUNT, of Dixon, followed with a paper entitled "Antiseptics as Applied to General Practice."

TREATMENT AND CARE OF EPILEPTICS.

This paper was contributed by DR. GEORGE BOODY, of Kankakee. The author says this class of unfortunates are shunned by friends and too often by their nearest relatives. They feel that they are looked upon as outcasts by every one with whom they come in contact, and what wonder that they, unable to help themselves, at last become despondent and are driven to desperation, finding themselves within the walls of a hospital for the insane. Of 100 cases in the hospital, investigation shows that the greater number of them became epileptics in childhood. Of the cases that began in childhood, three-fourths of them were due to infantile con-

vulsions, ascribed to teething. Gray says that these convulsions are known to be due to defective development, which is itself brought about by defective nutrition and ought to be preventable. Fright is ascribed as a cause, but the author has been unable to find statistics sufficient to prove how important a rôle it plays. From a pathologic standpoint, epilepsy is divided into two great classes: 1, epilepsy from organic disease; 2, from a morbid state or condition and not dependent upon any other disease. The author then dwelt upon the symptomatology and diagnosis of the affection. He is a strong advocate of the establishment of epileptic colonies, and says that no State can boast of advancement in the treatment of the insane so long as it continues to permit the epileptic insane to be promiscuously scattered among the general insane. There should be an absolute separation of these poor unfortunates from the other insane, and their speedy removal to a home for epileptics should be the foremost thought in the minds of all those who are deeply interested in the welfare of the insane. Illinois ought to profit by the example set by Massachusetts, Ohio and New York, each of which now have separate homes for this most unfortunate class of individuals.

Dr. Hugh T. Patrick, of Chicago, read a paper entitled

THE COMBINATION OF HYSTERIA AND ORGANIC DISEASE.

The author first related a number of cases in which hysteria was combined with various organic diseases. These diseases include typhoid and scarlet fevers, rheumatism, puerperal fever and acute pelvic inflammation, as well as more chronic affections of various kinds. Instances were also given in which there was a combination of organic disease and hysteria as well as simulation on the part of the patient. It was particularly emphasized that organic disease of the nervous system was apt to be complicated with hysteria and illustrative cases were quoted. The fact was emphasized that, particularly, multiple sclerosis and syringomyelia are apt to be complicated with hysteria, and among the toxemias those of lead and alcohol show most frequently the aforesaid complication. He believes our semeiology to be sufficiently advanced, even in the obscure realm of the nervous system, to allow us to say that the different types formed by certain pathologic conditions and stamped by well-defined combinations of symptoms remain sufficiently distinct to be generally separated the one from the other. When two types occur in the same individual it is not really a mixture with which we have to do, but simply a contiguity and juxtaposition; consequently in a given case of organic disease the diagnosis of hysteria is aided simply by means of the so-called hysterical stigmata and other symptoms characteristic of this disease. The various stigmata were then briefly enumerated. Of these, the principal are the characteristic anesthesiæ in patches and the so-called glove, stocking or sleeve anesthesia being the most typical. A distinctive trait of most of these anesthesiæ is the fact that they do not interfere with cutaneous reflexes and automatic accomplishments. The hysterical eye affections were then alluded to, embracing the characteristic alterations in the visual field, monocular diplopia and polyopia, monocular amaurosis with binocular vision, anesthesia of the eyelids and conjunctivæ. The peculiarities of hysterical paralysis were then pointed out as distinguished from those of organic origin, as well as the characteristic differences between hysterical, organic and epileptic convulsions.

In conclusion, the author insisted that a severe hysterical affection might occur in an individual who had never shown any other hysterical symptoms; that such an affection might remain unchanged for years and be almost the sole sign of this omnivagant disease. Furthermore, that fever, a rapid or subnormal pulse, retention or incontinence of urine, loss of sexual power or desire, loss of pupillary reflex to light, and ankle clonus, although indicating as a rule organic disease, may occur as symptoms of hysteria.

Dr. S. K. Crawford, of Chicago, read a paper entitled

HEMIPLEGIA BY THE HEMIPLEGIC HIMSELF.

The author of this contribution was seized with left hemiplegia Aug. 22, 1892. There were serious and, to him, most sensible perturbations of the circulation in the base of the right hemisphere of the brain, prominently located in his mind by the sensations present. "The first sensations were those of intoxication, with a mentality like the country peddler's wagon, when a wrecked hind wheel is compensated for by a limber pole with the large end fixed upon the front axle and the wheelless spindle of the axle placed upon the swaying pole, while the topmost end brings up the rear." Dr. Crawford said that he had treated six patients during the forenoon of the day of his seizure. His motions were awkward in the extreme, but weakness or marked prostration did not supervene until the approach of the lunch hour, when it became a prominent symptom and he walked to his bed chamber adjoining his operating room, threw himself upon the bed to doze the afternoon away, half sleeping and half waking, with no pain or distressing sensations of any kind, and with hearing and sight acute and perceptions unimpaired. The physical pain was nothing to be compared with the mental perturbations that were endured. As regards treatment, under the direction of his physician and by and with the consent of his consultants, he sent a gentle and continuous stream of electricity through the right hemisphere of his brain from fore to aft, and ranging downward from the right frontal to the occiput of the same side, daily for ten months, with a sitting of fifteen minutes at each and every employment. At each and every sitting the paralyzed muscles were awakened, as well as the dormant tissues, with massage, and a faradic or interrupted current. This treatment was supplemented by the employment of digitalin, strychnia, and minimum doses of quinin, and continued for some months after the employment of the electric current was suspended. Convinced that the treatment employed had been efficient, and when he could no longer detect any local pressure anywhere or observe any of that dazed or hazy condition about his being that so prominently prevailed in the earlier months of his illness, he began a course of specific nutritive treatment, by the exhibition of phosphorus in the way of medicaments and diet, and he was not only pleased but delighted with the results obtained.

The Address of Section One was delivered by Dr. Robert Leudeking, of St. Louis, Mo., who selected for his subject

THE PRESENT STATUS OF SERUM-THERAPY.

A variety of theories exist in explanation of antitoxin production. The one theory advances that the antitoxin is the product of the reaction of the specific toxin on the albumin of the living body. It is a cell elaboration, the toxins acting as cell stimulants. A second view says, May not the toxins become converted into antitoxins? A third view is, that in infections, where bacteria invariably have place, these themselves in their disintegration indirectly yield antitoxins. As a consequence of these developments of scientific research, Behring shows us that the incorporation of such serum, possessed of these faculties, into a second animal, is followed by the development of a similar protective state. This was called passively acquired or indirect immunization. The next step in natural order is the application of these experiences by Behring and Roux to the treatment of disease, first in animals, then in man. Behring held and still holds that antitoxin destroys the toxin, neutralizes its effect. One writer has shown, however, that such is not the case. Toxin and antoxin exist side by side. A mixture of the two, for instance, that will on injection leave white mice unscathed, may kill a guinea pig, which is a more susceptible animal.

Dr. Leudeking believes that we have but two diseases that may to-day be discussed as amenable to serum-therapy, namely, tetanus and diphtheria. With reference to the former the literature contains a number of reports of cures. Krieger cites five cases of recovery, but we have the word of Behring and of Roux to the effect that, although it is easily obtained and exhibits its preventive action with marvelous force, in practice it has not justified expectations. Of 553 cases of diphtheria, 303 were injected with serum and developed a mortality of 13.2 per cent. Two hundred and thirty were not so treated, causing a mortality of 47.8 per cent.

ETIOLOGY OF SOME HYSTERICAL MANIFESTATIONS, WITH REPORT OF A CASE TREATED BY HYPNOTISM.

This paper was read by Dr. Hugh T. Patrick, of Chicago. A point made by the author in the etiology of hysterical manifestations was that they are frequently the result of a subconscious imperative conception which slowly or rapidly develops from sensory or psychic impressions. The case was a unique one combining hysterical amaurosis of both eyes with hysterical pseudo-meningitis. The symptoms developed rapidly following an ophthalmic migraine, the pain and scintillating scotoma being the etiologic factors. This connection of cause and effect was distinctly shown during the recovery of the patient, and particularly by means of hypnotism. The hypnotism in this case, besides throwing light upon the processes involved in the generation of the symptoms, was a valuable diagnostic and therapeutic aid. Regarding hypnotism, Dr. Patrick insisted that there is no such thing as the hypnotic power as ordinarily understood

but that in every case the subject in reality hypnotizes himself; that is, that hypnosis is always a subjective phenomenon. The ordinary *modus operandi* of inducing hypnosis was described and illustrated.

*(To be continued.)*

## Connecticut State Medical Society.

The one hundred and third annual meeting of the Connecticut Medical Society was held at Hartford, Conn., in Jewell Hall. The Fellows of the Society met at 2 o'clock. There are five Fellows from each county of the State with the exception of Tolland County, which has only three representatives. The meeting was presided over by President FRANCIS N. BRAMAN, of New London. The address of the President reviewed the efforts of the medical profession in 1763 to obtain from the Colonial Assembly an act regulating the practice of medicine. This and subsequent efforts failed, until the Legislature of 1893 passed the medical practice act, under which the State is now experimentally progressing. The act had brought about a more popular interest in medical practice, and the wisdom of the Legislature in passing the act was apparent. The President recommended that the office of county reporter be abolished and that a member from each county be appointed to act as a general committee to do the work now assigned to the reporter, the members to be Fellows of the society. The address was referred to a committee of three and its recommendations were indorsed and laid upon the table for action next year, as they involve an amendment of the by-laws.

The Committee on Nomination of Essayists reported: On Medicine, Max Mailhouse of New Haven, Chas. B. Graves of New London; on Surgery, W. H. Carmalt of New Haven, Harmon G. Howe of Hartford, and they were appointed. Honorary members proposed, to be voted upon at the next annual meeting, were: T. M. Prudden of New York, W. W. Keen of Philadelphia, and T. G. Thomas of New York.

The Committee on Medical Examinations reported an amendment to the present law, requiring three sessions for examinations to be held each year, in March, July and November, instead of monthly, as now. The report was referred to the committee on legislation.

The Committee on Nominations reported the following list, which was adopted: President, Seth Hill of Stepney; Vice-President, Rienzi Robinson of Danielsonville; Assistant Secretary, Julian La Pierre of Norwich; Treasurer, W. W. Knight of Hartford. Committee on matters of interest to the profession in the State. C. S. Rodman of Waterbury; A. E. Abrams of Hartford; R. W. Kimball of Norwich. Committee on publication, W. H. Donaldson of Fairfield. Committee on anniversary, C. P. Lindsley, M. C. O'Connor and F. H. Wheeler of New Haven. Dissertator, S. B. Childs of Hartford; alternate dissertator, Arthur N. Alling of New Haven. Delegates to the AMERICAN MEDICAL ASSOCIATION: A. E. Abrams of Hartford; F. H. Wiggin of Litchfield; Nathaniel Hibbard of Danielsonville; H. E. Smith of New Haven; L. B. Almy of Norwich; John E. Loveland of Middletown; G. A. Shelton of Shelton; Frederick Gilnack of Rockville; Robert Lawler of Bridgeport; Ralph A. Goodpin of Thomaston; E. P. Douglas of Groton; E. W. Pierce of Meriden. Maine Medical Society, P. H. Ingalls of Hartford; W. W. Hawkes of New Haven. New Hampshire Medical Society, F. W. Simpson of Hartford; J. B. Kent of Putnam. Vermont Medical Society, E. F. Davis of Ellington; Carl E. Munger of Waterbury; George N. Lawson of Middle Haddam. Massachusetts Medical Society, D. A. Cleveland of Middletown; M. Van B. Dunham of Greenfield Hill. Rhode Island Medical Society, T. D. Crothers of Hartford; F. E. Guild of Windham; E. H. Davis of Plainfield. New Jersey Medical Society, H. O. Allen of Broad Brook; F. W. Wright of New Haven. New York Medical Society, William H. Carmalt of New Haven; J. R. Topping of Bridgeport; A. E. Abrams of Hartford. Member of committee on medical examination, J. F. Calef of Middletown.

The necrology during the year included the names of Drs. H. S. Wildman, N. J. Hanmer and George C. Gay of Waterbury; W. A. M. Wainwright of Hartford, and Stephen G. Risley of Rockville. The honorary members who died during the past year were Dr. Oliver Wendell Holmes of Boston, and Dr. George Chandler of Worcester, Mass.

In the evening, Dr. James Campbell, President of the Hartford Board of Health, gave a reception to the members of the society at his residence, 34 Congress Street.

The exercises the second day were as follows:

Annual report of the Secretary, N. E. Wordin, Bridgeport; reception of delegates from other State societies.

Vermont State Medical Society—J. M. Clarke, Burlington; Lyman Rogers, Bennington.

Massachusetts Medical Society—T. F. Breck, Springfield; Albert Wood, Worcester.

Medical Society of New Jersey—J. A. Exton, Arlington.

Medical Society of New York—L. Duncan Bulkley, New York; Reynold Webb Wilcox, New York.

Reports from delegates to other societies:

To the AMERICAN MEDICAL ASSOCIATION, San Francisco, 1894, Gould A. Shelton, Joseph E. Root, Edwin B. Lyon. Baltimore, 1895, Alvin E. Abrams, Chas. S. Rodman, Max Mailhouse, Geo. R. Shepherd, Fred'k Schavoir, Loren T. Day, Frederick M. Wilson.

To the Maine State Medical Association, T. Morton Hills, Thomas M. Bull, M. V. B. Dunham.

To the New Hampshire Medical Association, Theodore R. Parker, Leonard B. Almy.

To the Vermont State Medical Society, George C. Bailey, O. J. D. Hughes.

To the Massachusetts Medical Society, D. A. Cleaveland, J. J. Morrissey.

To the Rhode Island State Medical Society, Charles E. Brayton, Henry B. Plunkett.

To the New York State Medical Association, Edward H. Welch, Frederick S. Smith.

To the Medical Society of New Jersey, Max Mailhouse, Frederick B. Baker, William V. Wilson.

Report of committee on matters of public interest in the State:

Typhoid Fever—Irving W. Lyon, Hartford; Perforation in Enteric Fever—its Surgical Treatment, Frederick H. Wiggin, Litchfield; Notes of an Epidemic of Typhoid Fever at South Glastonbury, Charles G. Rankin; The Treatment of Typhoid Fever at the Hartford Hospital, Joseph B. Hall, Hartford; A Brief History of Serum-therapy, Arthur J. Wolff, Hartford.

The Use of Diphtheria Antitoxin in Connecticut—Irving W. Lyon, Hartford; Report of the Progress of Medicine, Elbridge W. Pierce, Meriden, Everett J. McKnight, Hartford; Report on the Progress of Surgery, Chas. C. Godfrey, Bridgeport; L. W. Bacon, Jr., New Haven; Dissertation, Senile Cataract; one hundred cases. Comment, Frederick M. Wilson, Bridgeport.

At 12 M. the President's Address, Medical Sociology.

The afternoon session began at 1:30 P.M. The first paper was on Pneumonia and the Treatment of its First Stage by Stimulation, by William J. Tracy, Norwalk, followed by Tetanus, Edwin B. Lyon, New Britain; The Modern Management of Natural Labor, Henry Fleischner, New Haven, Benjamin A. Cheney, New Haven; Endometritis; its Surgical Treatment, Frederick Schavoir, Stamford; The Eye and Diseases to which Eye Symptoms Point, Arthur N. Alling, New Haven; The Errors of Refraction found in Four Thousand Eyes, Harry S. Miles, Bridgeport; Cerebral Thrombosis, Gustavus Eliot, New Haven; The Morphin Habit, John W. Wright, Bridgeport; Simple Meningitis, Max Mailhouse, New Haven; Cerebro-Spinal Meningitis, N. Nickerson, Meriden; Tubercular Meningitis, Stephen J. Maher, New Haven; A Case of Acute General Miliary Tuberculosis, of so-called Typhoid Form. Autopsy, James M. Keniston, Middletown; Modern Improvements in the Treatment of Diseases of the Skin, R. A. McDowell, New Haven; The Localization of Intestinal Obstruction; Illustrated by Three Cases, W. S. MacLaren, Litchfield; Observations on Operations for radical cure of Hernia, with report of cases, George C. Jarvis, Hartford; Observations on Appendicitis with report of Operations, Charles E. Taft, Hartford; The Diagnosis and non-operative Treatment of Appendicitis, John F. Dowling, Enfield; Fracture of the Kneepan, James K. Mason, Suffield; Public Hygiene, Lucy C. Peckham, New Haven; Defense of Public Health Boards, Frank W. Wright, New Haven; The Therapeutic Value of Mountain Forests, Charles D. Alton, Hartford; The Inebriety of Insanity from a Medico-Legal Point of View, Thomas D. Crothers, Hartford; A Case of Utero-vesico-vaginal Fistula, with successful Operation, George C. Jarvis, Hartford.

The annual dinner was served at the Hartford Hotel in the evening.

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SATURDAY, JUNE 1, 1895.

## TO THE YOUNG DOCTORS OF 1895.

"Practice and experience are of the greatest moment in arts; and there is no kind of occupation in which men may not learn by their abortive attempts."—COLUMELLA.

The schools have turned out this year an unusually large number of physicians. Where they will all go? what will they all do? and how many will succeed in reaching a high professional level? are questions that can only be answered by speculation. The medical statistician assures us, with the blunt rudeness of a mathematical slugger, that such a percentage die during the first year, that so many grow weary, and engage in other pursuits within a twelvemonth, or within two years at most, and the remainder, say 75 per cent. remain in the profession to work, and worry, and win success or failure as best they may.

To this last class we wish to indite a few words, although at a venture we presume they must have had a vast deal of advice in the semestre just closed.

We urge the young doctor to lose no time in joining the local medical society where he casts his lot. The men composing it may not be exactly to his mind, they may to outward view lack even some of the refinements of society, they may not care for them, they may have fallen distinctly below the level of the average knowledge of the times. But we advise the young doctor to pay attention and watch these wise old practitioners, for experience is a wonderful teacher, and many times he may learn very much from those he now thinks so far behind in pathology and laboratory lore.

Sometimes you may feel hurt at being treated like a raw recruit by these veterans, but you must remember that like all veterans they will be with you when you win your spurs, in society debate, or at the bedside, and in proportion as you demonstrate your ability, their doubt of you will disappear. One thought will, we think, serve to give you a little closer relation with the old fellows, and that is that each one says to himself when he meets you, at the society or elsewhere: "Ah, if I were only young again like that young man! With the knowledge of the world, of men, of material things, that I have acquired, and his modern laboratory technique, what could I not accomplish in the average life time that is before him."

Be guided, then, by the voice of experience in all things not controverted by recent facts, and try yourself to become that ideal being the old doctor would be, had he only your growth and recent knowledge to add to his tact and *savoir faire*. Watch him closely! he knows men as open books; he knows how to manage and control them; he knows when to smile and when to be grave. He has learned his community; he knows what he can do without offense, and how best to acquire its good will. He knows best how to set forth the knowledge he has to its best advantage. Take all you can of his method, it is the result of experience, and pay him that deference when you meet him, that you yourself would like to receive from the classman of 1945 freshly filled with the new doctrines of which you will have only heard through your journal.

EURIPIDES lamented, "Alas! why is it not permitted to mortals twice to be young, and thence return once more to old age? For in our domestic affairs if aught be ill conducted, we put it right by after thought, but we have not this power over life. If we could be twice young, twice old, when we made a mistake, having twofold life, we could correct it."

The story of the Wandering Jew as retold by WALLACE in the "Prince of India," shows how much superior to every other man was that mysterious one who renewed his youth every one hundred years, and with it retained all the knowledge he had acquired during each centennium, and this leads us to advise our young doctor of 1895 to cultivate and conciliate his older colleagues, so that he himself may convey their general stock of information, in continuity with his own, to the profession of the future.

## THE DUAL BRAIN.

The theory of duality of the brain as maintained by HOLLAND and WIGAN, and later by BROWN-SEQUARD and others, is one in regard to which most physicians probably hold themselves uncommitted, as they are hardly ready to admit it as proved that the two hemispheres can act to any considerable extent independently of each other. Clinical observations such as would be of value in determining whether such independent action is possible are rare, and those that seem to point that way have generally

been more or less incomplete and unsatisfactory. A recent observation by DR. L. C. BRUCE (*Brain*, spring, 1895), is therefore of special interest, as it comes from one who may be presumed to be a competent observer, and it is published in one of the highest grade medical periodicals of our time.

The patient was under observation continuously for three months up to the time of the report. In one stage he was demented, left-handed and talked only Welsh and gibberish; in the other he was fairly intelligent, but maniacally mischievous, right-handed and talked English, but understood and could converse also in Welsh. In an intermediate condition he was ambidextrous, and spoke a mixture of Welsh and English. In the English stage he remembered nothing of the Welsh stage, but had a perfect recollection of anything that had occurred in his previous English stages. His circulation and his bodily conditions generally were good in this phase, while in his demented state his mental and physical conditions were exactly the reverse. In his maniacal condition he wrote legibly with his right hand and produced mirror writing with his left; the specimens obtained with difficulty during the demented condition were illegible but were written with the left hand, from left to right. Thinking that the transition from one stage to another might be due to circulatory changes, DR. BRUCE took sphygmographic tracings in both conditions; in the maniacal or English stage the tracing revealed a full pulse of high tension, while in the other it had lower tension and less volume. Attempts were made to produce the two different stages artificially, but without success.

We have apparently in this observation, as DR. BRUCE remarks, a case of right hemispheric melancholia or dementia and of left hemispheric mania, occurring probably in an individual whose cerebral hemispheres acted more or less independently prior to the advent of the mental disorder or disorders, if we can assume the existence of such a condition. Or, as he suggests, only one lobe of the cerebrum, the left, is educated, and takes the greater part in mental action; the right functioning mainly in motion, sensation, etc., and playing but a very small part in intellection, would naturally show its derangement rather by the symptoms of dementia than those of mental exaltation.

It seems possible, moreover, that this condition of independent action of the hemispheres may be only exceptional, and that ordinarily, either originally or through education they always act together and share the same functions. It will be noted that in this case, though DR. BRUCE does not remark it, speech, which is generally regarded as a function of the speech center in the left hemisphere, was not altogether lost in this patient but was limited to Welsh, his native tongue. This, as far as it goes, would indicate that the left brain was not altogether inactive or that there were bilateral speech centers, the former being perhaps the most probable of the two alternatives.

The case is an interesting one, not only as regards its bearing on the question of the duality of the brain, but also as suggesting possibilities from the study of the cases of circular insanity in our asylums generally. It may be that a closer observation of such patients would reveal other more or less similar instances, in which a marked predominance of one or the other cerebral hemisphere might be seen in the different phases of the disorder. In such a way, it may be, alienists have a special field of physiologic and psychologic research that has been heretofore too little cultivated.

## COURT-MARTIAL OF A NAVAL MEDICAL OFFICER.

The case of MEDICAL INSPECTOR KERSHNER, Fleet Surgeon of the North Atlantic Squadron, has lately attracted considerable attention. While in harbor at Kingston, Jamaica, a sick call was sent from a foreign merchant vessel to the *New York*, the flagship of the squadron. DR. KERSHNER declined to attend the case on the ground that it might be one of yellow fever, and that his first duty was to protect the men of the fleet from infection. The captain of the *New York* reported the refusal to the Admiral, who thereupon sent an account of the matter to the Navy Department. It is understood that the Surgeon-General sustained DR. KERSHNER in his action and that the Secretary of the Navy could find nothing in the Naval Regulations requiring medical officers to attend the sick of merchantmen in places where other medical attendance was available. Meanwhile a Court of Inquiry was convened on the *New York* to investigate the manner in which certain indorsements in the case got into the newspapers; and since then DR. KERSHNER has been tried by a court-martial at Brooklyn Navy Yard for violating Article 235, Naval Regulations, in giving to the press the said proceedings and for perjury in testifying under oath that he had not done so. It appears from the evidence given before the court-martial that the Doctor has been much disturbed by reflections on his professional and private character, to-wit, that he was lacking in humanity, timorous, etc., made by the Admiral on certain correspondence sent to the Navy Department concerning the affair, and that he had written to SURGEON-GENERAL TRYON and to MEDICAL DIRECTOR BLOODGOOD asking for their advice under the conditions then affecting him. His counsel held that there could be no offense in thus consulting his superior in the Medical Department as it was customary for medical officers when in difficulties to write such letters to their friends in the Service and particularly to the Surgeon-General. In denying before the Court of Inquiry that he had furnished an official account of the matter to any one but the

Surgeon-General he has not regarded his letter to DR. BLOODGOOD as coming within the scope of the query, which had a referenee to copies furnished with a view to publication. The official report of the proceedings of the court-martial are now before the Department, but the finding at this writing has not been made known.

In the JOURNAL of March 16, we indicated the need of a re-organization of the Navy Medical Department, to give energy to its present membership and enable it to fill its vacancies. We dwelt mainly on the objectionable features of the Service as presented to young officers, but it will be seen from DR. KERSHNER'S case that objectionable features are not absent from the service of officers even when they attain the higher grades. The publicity given to this matter in the daily press will not tend to induce young men to enter the Naval Medical Service. There are now twelve vacancies in the Corps, and perhaps it would be a good thing for the Corps if it were found that these vacancies could not be filled. The medical officers of the Navy should in all respects be on the same footing and have the same consideration as their confrères in the Army.

## THE SUCCULENT STRAWBERRY.

The season of the strawberry is now upon us. This berry in America is our earliest and latest fruit, for it is now produced in gardens on the Atlantic coast all the way from Florida to New Brunswick; in abundance in mid-season the entire length of the Mississippi Valley, and in great profusion on the Pacific coast.

One of the JOURNAL'S young men last week in an excellent article on the social status of physicians, credited the well-known phrase about the strawberry to SIDNEY SMITH, which was too generous to SMITH, for it was a physician DR. WM. BUTLER (d. 1621) who first said that "doubtless God could have made a better berry, but doubtless God never did." BARTLETT says this first appeared in the second edition of WALTON'S "Angler," 1655, and further quotes ROGER WILLIAMS in his "Key into the Language of America," 1643, p. 98, as saying: "One of the chiefest doctors of England was wont to say, that God could have made, but God never did make, a better berry."

In SHAKESPEARE'S time the strawberry was held in high esteem. RICHARD III. says to Ely: "My lord of Ely, when I was last in Holborn, I saw good strawberries in your garden there; I do beseech you send for some of them." But the strawberry was an ill-favored token for DESDEMONA, for the handkerchief which IAGO gave OTHELLO to whet his jealousy had strawberry spots.

SIR JOHN SINCLAIR says:[1] "In regard to strawberries it is impossible to say too much in favor of that fragrant, cooling and wholesome article. There are various modes of eating them, but with milk and cream is generally accounted the most agreeable, and is found to lessen in the stomach, the activity of the acid they contain. Strawberries are very wholesome. They tend to promote all the evacuations, and are laxative without inducing any apparently weakening efforts; they are also supposed to possess qualities unfavorable to stony concretions. The wild strawberry has the most agreeable flavor, and is perhaps the best of the whole species."

BEDDOE'S "Hygeia," vol. II, essay VIII, p. 64 says: "To persons with weak digestion, the addition of a meal from the garden, to one from the kitchen is in the highest degree pernicious." From this it appears that as there are two sides to almost every story, so here a little investigation shows that not everybody may eat raw strawberries with impunity.

That interesting volume, *Le Cuisinier et le Médecin*, Paris, 1855, says: "Horticulture has marvellously developed the size of this fruit, without damage to the exquisite delicacy of its taste. The fruit is refreshing and a little laxative; it is not well received by all stomachs, because it is hard and cold. Convalescents should abstain from it, and those with disease of the stomach. The berries are eaten ordinarily raw; with sugar; with red wine, Madeira or Frontignan, etc. They may be also eaten with cream; but then they are very indigestible."

FAZIO (*Trattato d' igiene, Napoli*, 1887, p. 763) gives an analysis of the strawberry from KÖNIG:

| | |
|---|---|
| Water | 87.66 |
| Sugar | 6.28 |
| Cellulose (from seeds) | 2.32 |
| Nitrogenous substances | 1.07 |
| Free acid | .93 |
| Non-nitrog. substance | .48 |
| Ash and remainder | .81 |

An interesting case of alleged poisoning by strawberries will be found in the *American Journal Medical Sciences*, N. S., 1851, vol. XX, p. 363.

The cooking of the berry makes it one of the most digestible of all table fruits, and while by no means do we object to the delicate flavor of the fruit as it is picked, yet the difficulty must be admitted of having the fruit placed on the table raw, and yet of exactly that degree of ripeness that allows its highest degree of digestibility. As the berry is generally sold in the market, there is such a wide variation between the greenest and the ripest, that only proper cooking can make a uniformly pleasant and digestible dish.

## THE OHIO STATE MEDICAL SOCIETY.

The semi-centennial meeting in Columbus, May 15-17, was an indication of decided progress in the affairs and influence of the society. Nearly five hundred physicians attended, most of them members. One hundred new members were admitted, making

[1] The Code of Health and Longevity, etc., etc. Edinburgh, 1807. Vol. I, p. 299.

the total permanent membership about eight hundred and twenty-five.

The program contained a lecture by JUDSON DALAND on malaria, illustrated by lantern slides. The Doctor was elected an honorary member of the society. Two alleged leprosy cases were exhibited by DR. J. G. McDOUGAL. These cases are quite distinctly an Ohio production, adding to the interest in them. We shall print this paper with the photographs in an early number of the JOURNAL.

Other notable features of the sessions were an elaborate presentation of the status of the treatment of diphtheria from different parts of the State by DRS. HOWARD and OHLMACHER, of Cleveland; CASE, of Ashtabula; MOORE, of Columbus; EICHBERG, of Cincinnati. An able paper was presented on hot-water bath treatment of lobar pneumonia, by DR. JOS. EICHBERG, of Cincinnati; and one on typhoid fever by J. E. WOODBRIDGE, of Youngstown.

One of the most important features was the organization of a committee on medical legislation based on county representation, and the appropriation of $500 to begin their work.

Ethical questions were decided, placing the society unequivocally in the list of staunch supporters of the Code of the AMERICAN MEDICAL ASSOCIATION.

DR. DAN. MILLIKIN, of Hamilton, was elected President; DRS. J. H. GOSS, of Lancaster, W. H. HUMISTON, of Cleveland, JNO. A. MURPHY, of Cincinnati, B. M. RICKETTS, of Cincinnati, Vice-Presidents. DR. THOS. HUBBARD, of Toledo, Secretary; DR. H. M. W. MOORE, of Columbus, Assistant Secretary; DR. JAS. A. DUNCAN, of Toledo, Treasurer.

The next meeting will be held in Columbus, May 27, 28, 29, 1896.

## A BACTERIOLOGIC CONVENTION.

The JOURNAL of April 27 gave notice of the organization of a coöperative bacteriologic investigation by the committee on water supplies of the American Public Health Association, and of the difficulties encountered by the committee in drawing up a scheme of laboratory methods for use in the investigation.

We now invite the attention of boards of health, State and municipal, to the call of the committee for a convention in the Academy of Medicine, New York City, on June 21 next. We trust that the laboratories of each board will be represented at the meeting, to aid in making its results give accurate expression to the experience of American bacteriologists on the points at issue. Collegiate institutions also are interested, as the subjects to be discussed by the convention are those of pure or scientific bacteriology irrespective of the practical work hereafter to be undertaken by the members of the committee.

The names of the bacteriologists who are to open the discussion of the various points, give assurance of the most advanced thought in each direction. We print the call of the committee in another column.

## TO THE NEW MEMBERS.

The Editor is in receipt of several letters inquiring why the new members do not receive the JOURNAL. We have to say that we have been unable, up to this time, to obtain a list of new members from either the Permanent Secretary or the Treasurer. The gentlemen who joined the ASSOCIATION at the last meeting will have to wait until the Treasurer's office furnishes the list. In the meantime we have *estimated* the number of new members at 300 and are storing up that number of extra copies.

# SOCIETY NEWS.

**Call for a Bacteriologic Convention.**—The following, dated May 21, 1895, has been issued by the Committee on Water Supply of the American Public Health Association:

*Sir:*—Your presence is earnestly solicited at a Convention of Bacteriologists to be held upon Friday and Saturday, June 21 and 22, 1895, in the Academy of Medicine, New York City.

The Committee of the American Public Health Association appointed to determine the possibility of establishing cooperative investigation into the bacteriology of American waters was from the outset impressed strongly by the fact that the chaos at present existing with regard to the bacteriology of water is essentially due to want of exactitude in the details of research and more especially to the absence of standard and generally accepted methods. The replies received to letters circulated by the committee and addressed to the leading laboratories of the United States and of Canada, have indicated a general concurrence in the views therein expressed and have shown how strong is the consensus of the opinion that the time has come to attempt to establish the methods of systematic bacteriology upon a basis more nearly resembling that of an exact science. The proposal that a conference be held has met with a most willing response on the part not only of those representing State, provincial and municipal boards of health, and connected with the water supplies of large public bodies, but also of those interested in every branch of bacteriology. The fact is fully appreciated that it is in the highest degree desirable that the methods employed by any one worker in any branch of systematic bacteriology should be such as others can be expected also to repeat with precision and should be such as gain the approval of the majority. A satisfactory settlement of the questions given below is conceded by experienced bacteriologists to be necessary for substantial progress in the future, not only in the field of pure bacteriology, but also along those lines in which its application plays a prominent part—in the bacteriology of water, air, soil, milk, etc., and in that of disease. The conference will therefore be an attempt to establish some common ground-plan for systematic work in bacteriology in general, in the bacteriology of American waters in particular.

The committee is authorized to announce at this date that discussion on the points at issue will be opened as follows:

1. What method shall be followed in neutralizing all media, and what standard degrees of reaction shall be adopted?

The discussion upon this and upon questions 3 and 8 will be opened by G. W. Fuller, S.B., Biologist in charge of the Lawrence Experimental Station of the State Board of Health, Massachusetts, who will communicate the results obtained by the committee upon these points.

2. What effects upon species differentiation, are produced by the ordinary differences in composition of peptone, meat juice, gelatine, etc. W. T. Sedgwick, Ph. D., Biologist to the State Board of Health, Massachusetts.

3. What media shall be used for all species differentiation, and how shall they be uniformly prepared?

4. What shall be the medium for and the conditions of, the stock culture from which all media are seeded? E. O. Jordan, Ph. D., University of Chicago.

5. What shall be the systematic detailed method to be followed in observing the results of cultures and the manner of recording them? W. T. Sedgwick, Ph. D.

6. What method shall be adopted by which full benefit may be derived from morphologic characteristics? Dr. T. M

Cheesman, Laboratory of College of Physicians and Surgeons, New York.

7. What tests shall be used for separating bacteria into clearly marked groups? Wyatt G. Johnston, M.D., Bacteriologist to the Board of Health of the Province of Quebec.

8. What shall be the method followed in determining the relation of bacteria to temperature? Geo. M. Sternberg, Surgeon-General, U. S. A.

9. What special methods are of value in the isolation of pathogenic bacteria in water? A. C. Abbott, M.D., University Laboratory of Hygiene, Philadelphia, Pa.; E. O. Jordan, Ph.D., University of Chicago.

10. What shall be the method of procedure in determining the pathogenesis of bacteria found in water? W. H. Welch, M.D., Johns Hopkins University, and Victor C. Vaughan, M.D., University of Michigan, Ann Arbor.

11. How is variability of species to be regarded? J. G. Adami, M.D., McGill University, Montreal.

12. What new methods can be suggested for the separation of bacteria into groups and for the identification of species? J. J. MacKenzie, Bacteriologist to the Board of Health of the Province of Ontario.

Communications in connection with these subjects have also been promised by several others, including: Thos. B. Carpenter, M.D., Health Department, Buffalo, N. Y.; H. C. Ernest, Harvard Medical School; C. J. Foote, Yale University; H. L. Russell, Agricultural Experiment Station, University of Wisconsin; C. Smart, Major and Surgeon, U. S. Army; E. B. Shuttleworth, University of Trinity College, Toronto.

The full program giving detailed order of proceedings will be issued early in June. The replies already received by the committee have assured us that the bacteriologic departments of many State, provincial and municipal boards of health will be represented at the conference, as also the principal universities of the United States and Canada. The conference will thus be a peculiarly representative assembly of bacteriologists. The importance of the subjects to be discussed leads us to hope that you will be present or be represented by a delegate. The convention will be called to order at 10 A.M., on Friday, June 21.

Yours faithfully,

CHARLES SMART,
J. GEORGE ADAMI,
GEORGE W. FULLER,
WYATT G. JOHNSTON.

## NECROLOGY.

CARL THIERSCH, M.D., the eminent German surgeon, died on the 28th ult. at Leipzig, aged 73 years. He was a native of Bavaria and was educated at the University of Munich, graduating in 1846. He afterward resided successively in Berlin, Vienna and Paris. He was a frequent contributor to the literature of his profession, and the system of skin-grafting which he introduced is now generally adopted by surgeons throughout the world. He also wrote upon maxillary necrosis from phosphorus and upon Listerian methods in surgery.

GEORGE A. PERKINS, M.D., who died in Salem, Mass, on May 18, was a man of mark and of varied experience. He was born in Salem, Oct. 15, 1813, and received his early education in the local schools. When he was 20 years old he engaged as a wood-engraver with a New York publishing house and so continued until 1836. After his return from Africa, whither he went as an Episcopalian missionary, he entered Harvard University Medical Department. He took his degree there in 1844, and soon afterward returned to Fishtown, in West Africa, to serve as a medical missionary. In 1850 he returned to his native town and at the age of 37 began life anew in the pursuit of private practice, and not long after began with others to agitate for the formation of the Salem Hospital. That institution, of which Dr. Perkins was consulting physician at a recent date, was launched in 1874. He was Post Surgeon at Forts Lee and Pickering from December, 1863, to May, 1865, and for a long time physician at the Salem House of Correction and the almshouse. He was widely known as an expert microscopist and chemist. He was a member of the Salem School Committee for fifteen years, and of the Essex Institute, Massachusetts Medical Society, New England Historical and Genealogical Society, Starr King Lodge of Free Masons, Salem Athenæum, and the Tabernacle Church. He was a member of the original staff of the Salem Hospital.

HENRY JOSEPH HESSE, M.D., formerly a coroner of Kings County, N. Y., died May 19 at his home in Brooklyn in the forty-second year of his age. He was born in New York of German parents, and in 1876 received his degree in medicine from the Long Island College Hospital. He began practice at once in the eastern district of the city of Brooklyn, where he continued during his professional life. The cause of his death was erysipelas, an attack of two weeks' duration followed about a week before death by a pneumonia.

RICHARD DUBOIS TRAVER, M.D., of Troy, N. Y., died suddenly May 17, from a poisonous dose of chloral. It is stated that he mistook the latter drug for Epsom salts, and immediately upon swallowing the solution he recognized that he had made a mistake. He busied himself for some time in his own office consulting his books for an antidote for the poison. He thus lost valuable time, and when it was too late went to the office of a neighboring physician. He there secured help, but it was unavailing, for death ensued not long afterward. He was an alumnus of the St. Louis Medical College in 1864, and of Bellevue College in 1867. He was eminent in his county organizations, having been president of his medical society. He was a member of his State Association and a veteran of the Rebellion, and also served in the 8th United States heavy artillery and the 7th Minnesota Infantry. He was also a prominent Mason. The Doctor was 56 years of age and had resided in Troy about twenty years.

PROF. GUSTAV HIRSCHFELD, of the University of Königsberg, died in Wiesbaden on April 20, after a long and heroic fight with cancer. In the vain hope of obtaining relief he even came to America, and became an inmate of the New York Cancer Hospital for a time. In his great and minute knowledge of Asia Minor and all matters pertaining thereto he was easily without a peer. He was a Jew, gifted with keenness of intellect and charm of manner as are few men. He died in the very prime of manhood.—*The Independent.*

W. MALLET PREVOST, M.D. A press dispatch announces the decease of the above named physician, late of Philadelphia, as having occurred May 13, at Fresnillo, Mexico.

J. F. SIMMONS, M.D., of Houston, Texas, is reported by telegraph to have been fatally shot by Robert Owen. It is stated that the physician was at the house of his assailant, having been summoned there to see a sick child. The assailant also shot his wife, but not fatally; he then committed suicide.

WILLIAM M. THORNTON, M.D., of Boston, Mass., May 23, aged 49.——Robert L. Mintie, M.D., of Chicago, May 21, aged 45.——Mary H. Thompson, M.D., of Chicago, May 21, aged 62.——Ezra Pascal Allen, M.D., of Athens, Pa., May 21, aged 74.——W. L. Blickhan, M.D., of St. Louis, May 20, aged 33, superintendent of the St. Louis City Hospital.——J. D. Carter, M.D., of Knoxville, Tenn., May 19.——Jay Guy Lewis, M.D., of Sparta, Ore., May 12.——S. W. Beck, M.D., of Washington, Ind., May 16, aged 78.——James H. Fore, M.D., of Baltimore, May 16.——Chauncey R. Fairchild, M.D., of Kansas City, Mo., May 16, aged 77.——David Youngman, M.D., of Boston, Mass., May 11, aged 78.——J. J. McManus, M.D., of Rutland, Vt., May 15.——G. S. Butler, M.D., of Edgefield, S. C., April 28.——Fred. Barrett, M.D., of Duluth, May 17.——J. R. Flowers, M.D., of Columbus, Ohio, aged 59.

## PUBLIC HEALTH.

**The Food of the Black Belt.**—The Department of Agriculture at Washington has established a department for research concerning the quality and quantity of food-stuffs consumed by the colored population in the black belt of our Southern States. It is located at the Tuskegee Institute, Tuskegee, Ala.

**Vigilance at Quarantine.**—The *Mexican Prince*, from Rio de Janeiro at New York quarantine May 25, was detained by Health Officer Doty to investigate the cause of death of a passenger during the voyage. The death was presumably due to consumption, but as there is yellow fever at Rio, Dr. Doty deemed it advisable to make careful inquiry.

**The Plague is Quarantinable.**—Under the last Regulations of the Treasury Department the diseases to be quarantined at ports of entry are cholera, yellow fever, typhus, variola, leprosy and the plague. The latter disease is now again rampant at Amoy, China, with fifteen deaths from that cause daily; so that the Pacific coast will have to be on the *qui vive*.

**Making Vaccination Odious.**—If it be true, as reported, that two physicians of the New York City Board of Health recently vaccinated 1,000 children in nine hours, that is a fraction over 18 a minute, the following comment of the Bangor (Me.) *Commercial* is just and timely: "To say that vaccination could be properly performed at this reckless, break-neck rate is simply ridiculous. But possibly these eminent practitioners wanted to give the impression that vaccination is a humbug and did their work with that end in view."

**Janitors' Homes in Public Schools.**—A case of diphtheria having occurred in the family of the janitor of public school No: 89, in a New York City up-town district, the school was closed and 2,000 pupils will take an unexpected vacation. These cases nearly always beget a certain amount of friction between health officers and the Board of Education. The short way out of it seems to be to have the janitors live near by rather than in the school edifice. The loss to the pupils of their enforced exclusion from school privileges, to say nothing of the possibly greater dangers of infection among the little folk, is not easily calculable. It is not infrequently through some species of favoritism that the janitor is crowded into a building—so that he can avoid rent-paying—which was never designed to have a family residence in the lower regions.

**Canned Horse.**—The suggestion in the JOURNAL of April 13, concerning the utilization as a food supply of the immense droves of wild horses in Oregon, Washington, Idaho and Montana, has developed the fact that some of the salmon canners on the Pacific coast had already turned their attention in that direction. One firm has put "canned horse" on the San Francisco market where it has been served in restaurants. The local papers say the flesh resembles beef in appearance, and can not be told from it by taste. "The grain of the flesh is fine, and dozens of people have sampled the canned horse, and are unanimous in pronouncing it good, though there was not one of them but confessed to a prejudice against the eating of horseflesh." Another firm has organized at Portland, Oregon, for canning on a large scale; it has bought 6,000 horses at from $1 to $5 apiece and is contracting for great numbers, expecting to supply a palatable, nutritious flesh-food at one-quarter to one-half the price of beef. It only remains for the learned lexicographers to put a name to it; "horseflesh" obviously will not answer; it is too suggestive.

**Another Typhoid Epidemic.**—Out of a population of about forty thousand inhabitants, Lancaster, Pa., had at the close of May not less than one hundred cases of typhoid fever under treatment, with an average of ten to twelve new cases reported daily. The water supply of the city is obtained from the Conestoga creek, a large stream which courses through the county and which supplies the city reservoirs. It is claimed that the Conestoga is polluted from various sources, so that its waters are a highly favorable culture medium for all forms of pathogenic bacteria. Reports say that the local board of health is using energetic efforts to check the spread of the disease and the State health authorities, who alone have power over the water courses, will take measures to remove the cause of the epidemic. Already there have been several deaths, and some well-known citizens are prostrated by the disease.

**Persistence of Diphtheria Contagion.**—At a recent séance of the Medical Society of the Paris Hospitals, MM. Sevestre and Méry communicated some extremely significant facts showing that the Löffler bacillus may persist in children who have been rapidly cured by the antidiphtheritic serum. This brings up the question, how long is it necessary to isolate diphtheritic children after disappearance of the false membrane and of the symptoms in general? They mention a case in which virulent inoculable bacilli were found forty days after removing the tracheal tube. Other observers have noticed a much longer duration, *e. g.*, Belfanti (*Reforma Medica*) reports a case of contagion after an interval of seven months. A bacteriologic examination is the only means of assuring us of the disappearance of the danger; but while this is easy in hospitals, it is difficult in family practice. We must not insist on too prolonged isolation in families with small means, where the children are numerous and the dwelling small. It seems that fifteen days' isolation after complete disappearance of the false membranes, when there are no more clinical symptoms, and especially when there is no more discharge from the nose, is sufficient. In cases of prolonged virulence for thirty or forty days, while this lasts it is advisable to continue the isolation as well as the irrigation of the mouth and nose.[1]

**Attacking Sanitary Merit.**—The usual biennial fight against Dr. Henry D. Baker, the able and useful Secretary of the Michigan State Board of Health, is on in the General Assembly of that State, and a legislative inquiry into the methods and value of the Board and of its Secretary was recently concluded. The JOURNAL is glad to note that the press of the State, generally, take an intelligent view of the situation, the Detroit *Journal* of a recent date characterizing the present attack as instigated by the "personal animus of two disgruntled ex-clerks," and asserting that, while the Board conclusively refuted every important charge, "the investigation has given most humiliating evidence of the ease with which small-minded men, smarting under fancied grievances, can pull the Legislature around by the nose. Dr. Baker declared that one clerk was insubordinate and the other lazy and incompetent. Their attacks on him were relative to small things, which may be found in any public office." In reviewing the work of the Board during the past years, in "stamping out" the communicable diseases and in investigating their causes with the view of finding means of prevention, our lay contemporary says: "The credit for the usefulness of the State Board of Health was very cheerfully accorded to Dr. Baker in a large measure by the present and former members of the Board, who testified before the committee. He is a broad man and has more administrative ability than is usually seen in men of science. He is not yet an old man, and Michigan can not afford to dispense with his services now." To which the JOURNAL would add that neither can the country at large nor sanitary interests generally afford to dispense with his services for very many years to come.

[1] L' Union Medicale, May 2, 1895.

**First Meteorological Observations.**—Renou in his history of the thermometer claims the construction of the first mercurial thermometer for Fahrenheit. "The date," he says, "so interesting for meteorologists, may be put at about 1721." The classic treatises state that this instrument dates from the sixteenth century, some claiming it for Galileo, others for Drebbel. In a communication to the Paris Academy of Sciences, the Abbe Maze announces that in searching through the documents of the Paris Observatory he has discovered that a priest-astronomer, Ismael Bouillau, made a series of observations in Paris with a mercurial thermometer in 1659 (*Ad Thermometrum Observationes, Anno* 1658, *Parisiis*), thus antedating Fahrenheit sixty-two years. Bouillaud's observations were taken in the Rue des Poitevins and comprise three summers and two winters. They are earlier than those of Lahire, regarded hitherto as the oldest for Parisian climatology. The first series of meteorological observations in the world were made at Florence in 1655, by Father Raineri.[1]

**The Death Rate of Paris.**—The rate for Paris in 1894 was at the low figure of 20 per 1,000, a rate never before reached in that city. The actual number of deaths was 5,000 less than in the year previous, which was one of the two most healthful years heretofore experienced. In 1891 the second lowest rate was bad, namely, 21.65 per 1,000; while in 1893 it was 21,81 per 1,000. The deaths from the preventable diseases have decreased in a manner never before known in Paris; the decrease having formed an appreciable factor in the lowered total rate. M. Deschamps, in his report to the Municipal Council, refers to the apparent causes of the improved health of the great city. He says:

"The improvement in the salubrity of Paris is a very long and complex undertaking, in which every detail has its value. The principal items of this enterprise are general improvement of streets, an adequate supply of spring water for domestic use, the increase of general prosperity, improved inspection of food stuffs, progress in the education of the masses, hygienic houses and drains, and destruction as complete as possible of the germs of infectious and contagious complaints."

The following are the statistics of the last fifteen years for Paris:

| In | Deaths. | Per Thousand. |
|---|---|---|
| 1880 | 55,706 | 25.37 |
| 1881 | 55,103 | 23.56 |
| 1882 | 56,854 | 25.33 |
| 1883 | 54,753 | 24.36 |
| 1884 | 55,059 | 24.42 |
| 1885 | 52,720 | 24.35 |
| 1886 | 55,110 | 24.35 |
| 1887 | 52,836 | 23.00 |
| 1888 | 51,230 | 22.00 |
| 1889 | 54,083 | 22.93 |
| 1890 | 54,566 | 22.80 |
| 1891 | 52,262 | 21.65 |
| 1892 | 54,536 | 22.47 |
| 1893 | 52,947 | 21.80 |
| 1894 | 48,145 | 20.00 |

There has been no essential alteration in the birth rate for the last four years.

**The Public Bath Act of New York State.**—By an enactment of the last Legislature of that State, it has been made mandatory upon all large cities to maintain free baths, to be open fourteen hours each day and to be supplied with both hot and cold water. The essential features of the Act are given below; the act which this latter amends was permissive only: "All cities of the first and second classes shall establish and maintain such number of free public baths as the local board of health may determine to be necessary. Each bath shall be kept open not less than fourteen hours for each day, and both hot and cold water shall be provided. The erection and maintenance of river or ocean baths shall not be deemed a compliance with the requirements of this section. Any city, village or town having less than fifty thousand inhabitants may establish and maintain free public baths, and any city, village or town may loan its credit or may appropriate of its funds for the purpose of establishing such free public baths." The propaganda in favor of this compulsory law has been indefatigably led by Dr. Simon Baruch of New York City. It is certain that he and his associates will rest neither day nor night, until the city fathers have given the poor several of these free baths. The form of the baths will be that of the "rain baths," which are in effect shower baths. Each shower is in a small apartment, just sufficiently large to allow the bather to stand upright and to give him room to properly scrub himself. When he enters his bath all he has to do is to pull a chain and receive a full supply of water over his form. The shower will work automatically, so that when he ceases to pull the chain the supply of water will be cut off, enabling him to cleanse himself in any way he may desire. These baths are so compact that within a very small space a great many persons can be accommodated. In the building erected by the Society for Improving the Condition of the Poor there is a bath area of only 26 by 69 feet. Yet this institution accommodates 800 bathers a day. This also is the capacity of the Baron de Hirsch Fund baths. The Riverside Association baths accommodate 500 persons a day and the DeWitt Dispensary baths, which occupy very little room, 50 bathers a day.

[1] Journal d' Hygiene, May 2, 1885.

**Health Reports.**—Sanitary reports to the Supervising Surgeon-General, Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Arizona: Nogales, May 22, 1 case.
Michigan: Battle Creek, May, 2 cases.
Missouri: St. Louis, May 11 to 18, 3 cases, 2 deaths.
Ohio: Cincinnati, May 17 to 24, 7 cases.
Pennsylvania: Philadelphia, May 11 to 18, 14 cases.
Wisconsin: Milwaukee, May 18 to 25, 5 cases.

SMALLPOX—FOREIGN.

Brazil: Santos, March 16 to 23, 3 cases, 1 death; April 17 to 20, 3 cases, 1 death.
Ceylon: Colombo, April 13 to 20, 1 case, 1 death.
England: Liverpool, May 4 to 11, 2 cases; London, May 4 to 11, 33 cases.
France: Rheims, May 4 to 11, 1 case.
Holland: Rotterdam, May 4 to 11, 2 cases.
India: Calcutta, March 31 to April 20, 444 deaths.
Ireland: Dublin, May 4 to 11, 15 cases, 1 death.
Italy: Naples, April 21 to May 4, 1 case, 1 death.
Porto Rico: San Juan, April 17 to May 8, 28 cases.
Russia: Batoum, April 1 to 30, 7 cases, 3 deaths; Odessa, April 27 to May 4, 9 cases, 1 death; Warsaw, April 27 to May 4, 1 death.
Scotland: Edinburgh, May 4 to 11, 1 case, 1 death; Glasgow, May 4 to 11, 70 cases, 1 death.
Switzerland: Zurich, April 27 to May 4, 1 death.

CHOLERA—FOREIGN.

Arabia: Camavan, March 23 to April 9, 29 cases, 25 deaths; March 30 to April 21, 60 cases, 15 deaths; Djeddah, May 1, 28 deaths; Mecca, April 21, 7 cases; April 22, 10 deaths.
France: Roubaix, April 1 to 30, 3 deaths.
India: Calcutta, March 31 to April 20, 311 deaths.
Russia: Government of Volhynia, March 17 to April 6, 112 cases, 13 deaths; Podolia, March 24 to April 13, 22 cases, 13 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Santos, March 16 to 23, 76 cases, 50 deaths; April 17 to 20, 105 cases, 70 deaths.
Mexico: Vera Cruz, May 9 to 16, 1 death.
Porto Rico: San Juan, April 17 to 24, 1 death.

## MISCELLANY.

**Personal Notes.**—Among the new F. R. S., are Professor Macewen of Glasgow University, Dr. S. Martin the physiologist and Mr. W. H. Power of the Local Government Board. Three out of the annual fifteen are of the profession.

**M. Maurice Delafon** and staff will have charge of an International Sanitary Exhibition, to be held at Paris, beginning June 1, and continuing to September 15. Members of the President's cabinet and various learned societies are to be the patrons of the undertaking.

**Dr. Allan McLane Hamilton**, of New York City and London, has concluded to take up his residence in the latter city, during May, June, July and August—the London "season" each year. He will resume his New York practice after the summer holidays are over. The precedent of an American medical man setting up in practice in London, for a part of the year, was set by Dr. S. Wier Mitchell of Philadelphia.

**Donations by the Vanderbilts and Sloans.**—The donations by the Vanderbilt and Sloan families to the cause of medicine, and the relief of the poor in connection with helping along the cause of medical education—as represented by the College of Physicians and Surgeons, New York—have amounted to $2,270,000. This sum has been given since 1884.

**Professor Dittel** of the Vienna Faculty of Surgery passed his eightieth birthday on the 15th of the current month. He is still very vigorous and bright, diligent and attentive to his class work. He maintains a popularity that is not felt for all his colleagues.

**Relief for the Wounded in Madagascar.**—The Paris edition of the New York *Herald* states that Madame Felix Faure has sent to the Comite de l'Union des Femmes de France, of which she is honorary president, the sum of 5,000 francs contributed by M. Max Lebaudy for those who may be wounded in Madagascar.

**A French physician,** desiring to establish himself in Montpellier and not wishing to be too long about getting patients, went to work and systematically and noisily advertised the loss of a valuable dog. The town crier was employed to announce a reward of $125 for the return of the animal. This course caused people to talk and some of them to employ the newcomer. It is said that this "dodge" was a success.

**Antiseptic Action of Iodoform.**—Stchegoleff shows that *in vitro* iodoform exercises a direct antiseptic action on cultures of human and avian tuberculosis. A contact of forty-eight hours sterilizes a culture of human tuberculosis. When introduced into the organism with living and virulent tubercle bacilli, iodoform diminishes their virulence without checking their development. The agent does not act on the vitality of ordinary pyogenic microbes, but *in vivo* neutralizes their toxins.[1]

**A Camphor Famine.**—As one result of the Chino-Japanese war a camphor famine is now threatened, according to a London dispatch of the 25th ult., which says the price of camphor has rapidly advanced and Japan is placing the most severe restrictions upon its exportation. Much of the camphor in England is held by a syndicate. Should a warm summer bring cholera and dysentery the demand for camphor would be great, and its scarcity will not only interfere with many medical compounds but will hinder the manufacture of smokeless gunpowder, in which camphor largely enters as an ingredient.

**Heroism of a Military Surgeon.**—The English papers refer with great pride to the gallant behavior of Surgeon Whitchurch in the Chitral campaign. The following is taken from the *Medical Press and Circular*, for May 8: "Surgeon-Captain H. F. Whitchurch, attached to the 24th Bengal Native Infantry, performed a feat of exceptional gallantry on the occasion of the *reconnaissance* of March 3 from Fort Chitral. Captain Baird fell mortally wounded, but Surgeon-Captain Whitchurch, although running serious danger of death or capture by the enemy, would not abandon him, but carrying the wounded officer on his back, fought his way back to the fort."

**Filthy Card Catalogues a Means of Possible Infection.**—The *Independent*, for May 16, thus refers to the dirty old card catalogue of the Astor Library: "It is remarkable that in this day of germs and germicides nobody has invented a sanitary library card catalogue. Every one that recalls the unspeakable filth of the old and now departed card catalogue of the Astor Library must suspect that it was a highly effective agency in the spreading of disease. The bound catalogue is perhaps even worse, for an attentive observer must often have noted that the average reader in a public library turns the leaves of the catalogue with the aid of a finger dampened by application to his own lips. *The commercial exchange of germs* by this method *must reach a vast volume of transactions* in the course of a year."

[1] Arch. de Med. Exper., March, 1895.

**A New Special Hospital for Diseases of Women** has been opened at Montreal, Canada, under the patronage of the Countess of Aberdeen, wife of the Governor-General. The staff includes Sir James Grant, M.D., K.C.M.G., consulting physician; Wm. H. Hingston, M.D., LL.D., consulting surgeon; A. Lapthorn Smith, B.A., M.D., M.R.C.S. Eng., surgeon-in-chief; H. Lionel Reddy, C.M., M.D., surgeon; S. F. Wilson, C.M., M.D., assistant surgeon and registrar; Dr. Sylvester, assistant surgeon, and Dr. Letellier de St. Just, assistant surgeon. The hospital is absolutely free to women who are poor and sick, and who are residents of the city. Patients from outside the city will be admitted on payment of a nominal charge.

**Pleurisy with Effusion Cured without Operating.**—Bosch reports a case of a little girl of 9 who entered the hospital with all the symptoms of right-sided pleurisy; the left side measured 27.5 ctm., the right 28.7. The swelling extended to the third rib; respiration 46; temperature 38.1 degrees C. Before resorting to thoracentesis, the author determined to try medicinal agents and if these failed to operate. Treatment—milk diet for eight days, cantharidal collodion as a revulsant, citrate of magnesia and calomel as purgatives, digitalis, strophanthus and nitrate of potash as diuretics. Under this treatment the effusion rapidly diminished and the patient left the hospital after a month's time completely recovered.[1]

**A Missouri Giantess.**—A very tall Missouri lady lives at Price's Station, in Scotland County. Her name is Ella Ewing; her height is eight feet and two inches; weight, 287 pounds; head and hands large; size of shoe is nearly seventeen inches. She is not slender but fairly well provided with adipose. Judging from a photograph no want of anatomical symmetry is apparent, unless it be an excessive length of the lower extremity. The femur is especally open to comparative measurement at some future time, when it will likely be found the longest bone in the body of herself or any other living Missourian. Her age is not stated, but the photograph is that of a young lady not long out of her teens, however long she may be by other standards. She is reported as intelligent, fairly well educated and of a devout temperament. Her father is reported as a sixfooter, while her mother is of the average height of women.

**Constipation in the Young.**—Marfan says that a nursling should have two to four stools a day during the first two months, and one to two after the first year. Whenever they are less frequent, constipation is present. Transient or habitual constipation may be due to retained meconium, stricture of intestine, atresia ani; symptomatic constipation to febrile states, cerebral disorders; alimentary constipation to simple or sterilized cow's milk, excess of casein or mineral waters, deficient sugar or fat; congenital constipation to intestinal occlusion, excess of length or folds of the large bowel. Consequences—rectal prolapse, umbilical hernia, invagination of the bowel, convulsions, prurigo, urticaria, eczema, anal fissure, mucous, serous or ulcerative colitis. Treatment—alimentary of nurslings, a little sugar water (Jacobi) cow's milk 4 parts to 100 of sugar water; congenital lavage by the urethral catheter, two tablespoonsful of glycerin to one liter of water or two tablespoonsful of oil with the yelk of an egg to 60 grms. of water; massage, electricity; suppositories for fissure; no laxatives before three months, no purgatives during the first year.[2]

**A Philadelphia Incident.**—The Philadelphia *Record* is authority for the following case of dislocation of the inferior maxilla. The *Record* calls Dr. Pancoast "a considerate physician:" "A downtown woman, who justly bears the reputation of a common scold, recently became so enraged at some action of her inoffensive husband that in endeavoring to do justice to her feelings she threw her jaw out of place.

[1] Revue Int. de Med et. Chir. Prat., 1895, No. 5.
[2] Jour. de Medicine, Feb. 3, 1895.

Of course, she was immediately silent and her husband, although he hurried with her to Dr. Pancoast's office, experienced a sensation he had not known for years, for he berated his wife soundly and received no words in reply. Perceiving that the woman was impatient to give her husband a scolding Dr. Pancoast purposely allowed her to wait for half an hour, while he attended to others, and then, telling the husband to get out, he threw the jaw back in place. However he placed a tight bandage under her chin and advised her to keep it there some time, in order to give the husband a much needed rest."

**Rank in the British Army Medical Staff.**—Under the heading of "War Office Administration" the *London Times* discusses, among other matters of sanitary interest, the questions of rank and title of medical officers. It avers that medical officers may occasionally be seen drilling hospital attendants as if they were infantry soldiers, and refers to their plea to sit on courts martial as one that will probably soon be admitted. "Surgeons-Major-General require medical officers attached in a staff capacity to act as the medium of communication between themselves and other departments; and when a heedless young regimental officer is liable to be officially reported for applying to his medical attendant the honored title of "doctor" it is clear that all proper professional pride is in danger of being lost. Even the essential requirement of a distinctive uniform has dropped out of sight and an expert is needed to differentiate the Medical from the Army Staff. In striving to be what he is not, the army doctor will inevitably fail in the exercise of his rightful, honorable, and indispensable functions. To fighting rather than to saving life his ambitions will tend. Meanwhile the necessity for converting naval doctors into admirals, post-captains and commanders does not appear to have yet arisen. Medical science in the Navy does not seem to be a source of shame to its professors, who, moreover, wear distinguishing marks well understood by the navies of all foreign powers." This represents the Horse Guards or military view of the question; but according to the *Lancet*, army medical officers regard the matter from a wholly different standpoint. The only thing that confers any authority, power or standing in the Army is miltary rank, and so long as medical officers form part of the Army and are not civilians they should possess adequate rank if they are to discharge their duties efficiently. As regards the alleged or suggested incompatibility of military rank and title with professional zeal and merit, they consider this a ridiculous assumption and point to the organization of the medical services of other nations,—America and continental Europe,—in which medical officers possess such titles and fulfill all their professional duties with entire efficiency and satisfaction.

**Operative Methods in the Sacral Region.**—Borelius has studied the anatomy of the sacral region from a practical and operative standpoint on twenty-nine cadavers—twenty males and nine females. In order to gain access to the upper part of the rectum the method of Rehn-Rydygier is recommended; for the uterus and the upper vagina, that recently proposed by Hochenegg. The author operated once by the former method, but vesical paralysis followed the operation and lasted for two weeks. In order to avoid this Borelius has invented a method of sacral resection so as to reach the upper part of the rectum and at the same time avoid the sacral plexus, so important for innervating the bladder and anus. The method is as follows and has been tried in four cases without any bladder trouble or any other inconvenience: 1. Incision of the skin and soft parts in the median line from the posterior inferior spinous process of the ilium to the lower end of the coccyx down to the bone; from the coccyx the line deviates to the right, following the lower border of the gluteus maximus; denudation of the right border of the coccyx and sacrum to the right sacrosciatic ligament. 2. Section of the bone in an oblique line touching the lower border of the fourth posterior sacral foramen on the right, and the third on the left; during the operation the bony flap is held toward the left and replaced when done. The advantages of this over the Rehn-Rydygier method are: 1, the incision in the skin and soft parts is more simple and more favorable to healing; 2, the sacro-sciatic ligaments on each side are left intact, also the fourth sacral nerve; 3, the muscular connection between the anal region and the lower end of the coccyx is also untouched. To reach the uterus through the sacrum, Borelius prefers the method proposed by Hochenegg in 1892, with a slight modification. In order to preserve the connection of the anal region with the bone, instead of extirpating the coccyx like Hochenegg he makes a temporary resection of the bone and when the operation is finished replaces the coccyx. In two cases operated on by this method recovery was complete.[1]

**Sanitary Supervision of Public and Private Hospitals.**—Very delicate questions often arise between the sanitary authorities and the hospitals that receive a share of the municipal moneys. Nearly all superintendents of hospitals if left to themselves will decline to accept certain "troublesome cases," as noisy alcoholized persons. And they as well as the ambulance surgeons have been known to jump at a diagnosis of "drunk," when there was an unrecognized fracture at the base of the skull, plus a history of dissipation. In Brooklyn, complaints having been recently made to Health Commissioner Z. T. Emery, that deaths had taken place of persons consigned to the police precincts when they might have had a chance for their lives if brought under hospital treatment, he held conferences with the superintendents of the leading institutions, and others, with a view to preventing the future occurrence of avoidable "accidents" of the nature complained of. The superintendents were heard on their own behalf and on the behalf of their surgeons of ambulances. As a result it was determined that those hospitals of Brooklyn that partake of the excise funds shall be placed under a clearly defined set of regulations. These will be enforced to the best of his ability by the Commissioner, but his power of discipline over the institutions will probably be accepted without serious contest. The following list of special regulations has been served upon the various institutions: "Although the accusation of inhumanity, occasionally made against the hospital authorities and ambulance surgeons of this city is generally undeserved, it must, nevertheless, be admitted that, unfortunately, such is not always the case, as there have come to my knowledge certain well authenticated instances of patients in a dying condition having been refused transportation by ambulance surgeons, and of others who have been denied admission to hospitals which are under contract with the city to care for the sick and poor. In order to diminish the possibility of the future occurrence of these deplorable mistakes, your attention is called to the following rules, which take effect immediately:

"1. All ambulance surgeons must be appointed by the Commissioner of Health, but the candidates nominated by the hospital superintendents will be accepted if they present satisfactory evidence of the possession of the proper qualifications for the position.

2. The hospital that is under contract with the city to treat the sick poor must maintain an emergency ward, containing not less than two beds, for the temporary reception of ambulance cases. This ward is to be used for no other purpose.

3. When an ambulance case is brought to a hospital from the latter's own district, the patient must be promptly admitted. Whether he shall be retained or not may be determined later.

4. Cases of grave injury or sickness must be admitted even when brought from another district.

5. Cases of delirium and insanity, when brought in an ambulance, must be admitted and cared for until they can be transferred to the department of charities.

6. Unless the free beds are all occupied, no application for hospital treatment is to be refused without a medical examination.

[1] Nord. Med. Arkiv., in Rev. Int. de Med. et Chir. Prat. 1895, No. 5.

**The Military Surgeons.**—The National Association of Military Surgeons met in Buffalo, May 21. Brigadier-General George M. Sternberg, U. S. Army, presided. Mayor Edgar B. Jewett welcomed the Association in the name of the city of Buffalo, and the President of the State Medical Society, Roswell Park, M.D., in behalf of the profession. Responses were made by General Sternberg and Major Briggs.

Many interesting papers were read, of which the JOURNAL expects a full abstract next week. The meeting was one of the most successful yet held. One of the interesting features of the meeting was the presentation of a silver shield suitably inscribed to the founder of the organization, Prof. Nicholas Senn, at present Surgeon-General of the Illinois National Guard.

Philadelphia was selected as the next place of meeting and the following were elected as officers for the ensuing year:

President—Louis W. Reed, Colonel and Surgeon-General, N. G., Pennsylvania.

First Vice-President—Albert L. Gihon, Medical Director U. S. Navy.

Second Vice-President—Col. Charles H. Alden, U. S. A.

Secretary—Eustathius Chancellor. Lieutenant-Colonel and Medical Director, N. G., Missouri.

Treasurer—Lawrence C. Carr, Major and Surgeon, N. G., Ohio.

**Operating Rooms and Laboratories at the Hospitals of Military Posts.**—To the recent inspection of a number of military posts by Surgeon-General Sternberg is probably due the issuance of the following circular of instruction in relation to antiseptic surgery and chemic and bacteriologic investigations:

It is presumed that medical officers are fully alive to the requirements of modern aseptic surgery, and even at isolated and frontier posts have, in operations they have been called upon to perform, carried out the principles of asepsis with the apparatus at hand.

In every post-hospital, a room should, if possible, be set aside as an operating room. Especial attention should be given at all times to the cleanliness of this room, including its walls and floors, as well as the necessary furniture. A stout table, of suitable size and plain finish, that can be easily scrubbed, should always be in readiness. In this room should be placed all the instruments and dressings, antiseptics, anesthetics and other appliances that may be needed in an emergency. While always accessible, they should be guarded from handling by irresponsible persons. The Arnold sterilizer and the boiler of the kitchen stove or range afford ready means for sterilizing instruments, dressings, basins, towels, etc., that may be needed at an operation.

At the large permanent posts, if no suitable room is available, plans and estimates should be forwarded for such changes in or addition to the hospital building as will provide a conveniently located operating room.

The Surgeon-General also desires that provision should be made for a small laboratory, in which the chemic and bacteriologic sets furnished can be conveniently arranged, so that they may be always ready for use. When apparatus furnished for diagnostic purposes or for use in the investigation of questions in pathology or hygiene is left in the storeroom, unpacked or upon the shelves, the fact that it is at the post will often be overlooked, especially by junior officers who are not responsible for the property.

The following articles will be furnished, on requisition, to those posts at which the post surgeon reports that a room is available for use as an operating room:

1 operating table.
1 case for instruments.[1]
3 operating gowns for surgeons and assistants.
1 surgical cushion, Kelly's.
1 dozen tubes, Fowler's, catgut and silkworm gut, assorted sizes.
1 dozen spools, Halstead's, for silk ligature.
1 dozen brushes for cleansing. 1 kilo green soap.
1 table for instruments.
1 case for dressings, etc.[1]

[1] NOTE.—Authority will be given for the purchase or manufacture of these cases at the post if they can be so obtained at reasonable price.

ENAMELED WARE.

1 instrument boiler.
2 wash basins.
4 basins for sponges, etc.
2 pitchers.
2 pails.
2 trays for instruments.

GLASSWARE.

1 Petri's dishes for needles, etc.
2 small jars, covered, for ligatures, etc.
4 larger jars, covered, for dressings, etc.
6 flasks for flushing solutions.
6 one-gallon bottles, g. s., for antiseptic solutions.

## Society Notes.

THE Jackson County, Mo., Medical Society held a regular meeting in Kansas City May 23.——The annual meeting of the Missouri State Medical Society was held May, 21, 22 and 23. The following officers were elected for the ensuing year: President, E. Leslie Hall, Kansas City; Vice-Presidents, Drs. J. H. Thompson, Kansas City; H. C. Schutte, West Plains; J. D. Potts, Boonville; J. J. Russell, California; Recording Secretaries, F. R. Fry, St. Louis, and T. B. Hall, Marshall; Corresponding Secretary, C. E. Wainwright, Kansas City; Treasurer, C. W. Thompson, Jefferson City. ——The Sioux City Medical Society held its annual meeting May 15. The following officers were elected for the ensuing year: President, R. D. Clark, Akron; Vice-President, Van Buren Knott; Treasurer, A. C. Bergen; Secretary, W. J. White.——The annual meeting of the Morris District Medical Society was held at Dover, N. J., May 14. The following officers were elected for the ensuing year: President, D. B. Evans, Morris Plains; Vive-President, H. N. Day, Butler; Secretary, Levi Farron, Middle Valley; Treasurer, John S. Stiger, Mendham.

# THE PUBLIC SERVICES.

**Army Changes.** Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 18, 1895, to May 24, 1895.

Capt. ROBERT J. GIBSON, Asst. Surgeon, will be relieved from duty at Ft. Sam Houston, Texas, by the commanding officer of that post, and will report in person to the commanding officer, Ft. Thomas, Ky., for duty at that post.

Major WILLIAM H. GARDNER, Surgeon, is relieved from duty as attending surgeon and examiner of recruits at Hdqrs. Dept. of Dakota, and ordered to Ft. Reno, Oklahoma Ter., for duty at that post, relieving Major HENRY M. CRONKHITE, Surgeon.

Major HENRY M. CRONKHITE, Surgeon, is granted leave of absence for four months, on surgeon's certificate of disability, with permission to leave the Dept. of the Missouri, to take effect on being relieved from duty at Ft. Reno, Oklahoma Ter.

Capt. LOUIS W. CRAMPTON, Asst. Surgeon, is granted leave of absence for ten days, to take effect from the date of the conclusion of his examination for promotion.

**Navy Changes.** Changes in the Medical Corps of the U. S. Navy for the week ending May 18, 1895.

Asst. Surgeon L. L. YOUNG, to examination for promotion.
P. A. Surgeon F. W. OLCOTT, from the "Constellation," and to the "Enterprise."

## LETTERS RECEIVED

American Laundry Machinery Co., Cincinnati, Ohio.
Bettman, Boerne, Chicago, Ill.; Bulkley, L. Duncan, New York, N. Y.; Berg, L. Munthe, Laredo, Texas; Bradley, J. S., Madison, Wis., (2); Bigelow, C. P., Grand Rapids, Mich.; Brayton, Laura F., Chicago, Ill.; Bushnell, K. A., Little Falls, N. Y.; Bacon, L. C., St. Paul, Minn.
Cleaves, M. A., New York, N. Y.; Cook, C. E., Meudota, Ill.; Currier, C. G., New York, N. Y; Cheney, W. F., San Francisco, Cal.; Caldwell, B. D., Chicago, Ill.
Dight, C. F., New Orleans, La.; Dent Wm. M., Newburg, W. Va.
Garwood, Alonzo, Cassopolis, Mich.; Galbraith, T. S., Seymour, Ind.
Hummel, A. L., Philadelphia, Pa., (5); Ham & Carver, Dubuque, Iowa.
Jelks, J. T., Hot Springs, Ark.
Klebs, E., Asheville, N. C.; Kinnaman, A. S., Cleveland, Ohio; Koplitz-Melchers Brewing Co., Detroit, Mich.
Lautenbach, L. J., Philadelphia, Pa.; Le Grand, Jno. C. Anniston, Ala.; Leedom, Chas., Philadelphia, Pa., (2).
Meriness, Dwight, Milwaukee, Wis.; Monarch Cycle Mfg. Co., Chicago, Ill.; Martinet, J. F., Baltimore, Md.; Milliken, Mark, Hamilton, Ohio; Mowery, H. A., Marietta, Pa.
Newman, H. P., Chicago, Ill.
O'Brien, M. C., New York, N. Y.
Pennington, J. R., Chicago, Ill.; Parry, J. W., New York, N. Y.; Pierson, Allen, Spencer, Iowa; Peck, Geo., Cooperstown, N. Y.
Robins, W. L., Washington, D. C.
Smart, Chas., Washington, D. C.; Silverstien, A. B., St. Louis, Mo; Smith, W. S., St. Clair, Minn; Sykes, R. D., Chicago, Ohio.
Thomas, A., Malvern, Ohio.
United States Heater Co., Detroit, Mich.
Woodburn, F. C., Indianapolis, Ind.; Wishard, W. N., Indianapolis, Ind.; Woodbury, Frank, Philadelphia, Pa.; Watkins, W. W., Moscow, Idaho; Wyckoff, R. M., Brooklyn, N. Y.; Webster, L. R., Oakland, Cal.; Williamson, A. N., New London, Conn.